Number 58 — December '87/January '88 $2.75

EARTH GARDEN

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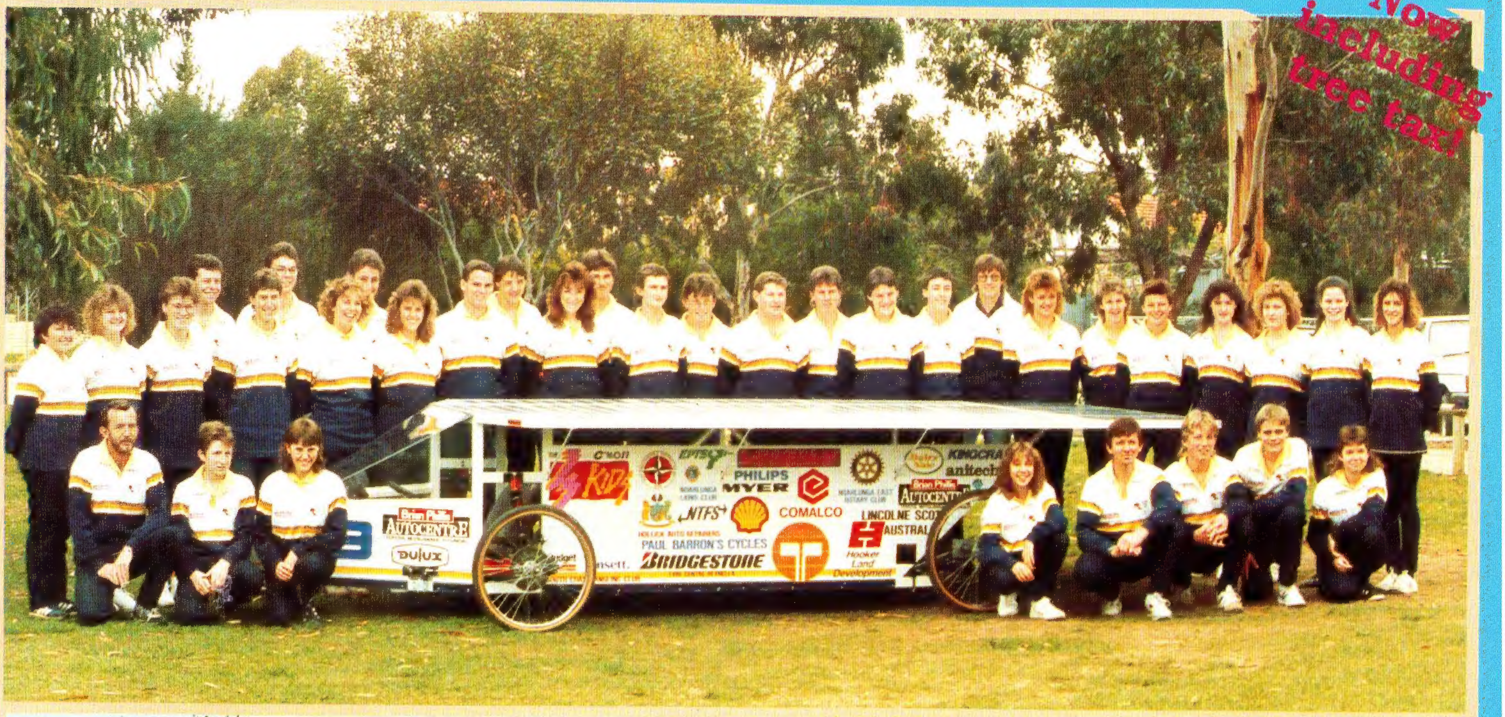

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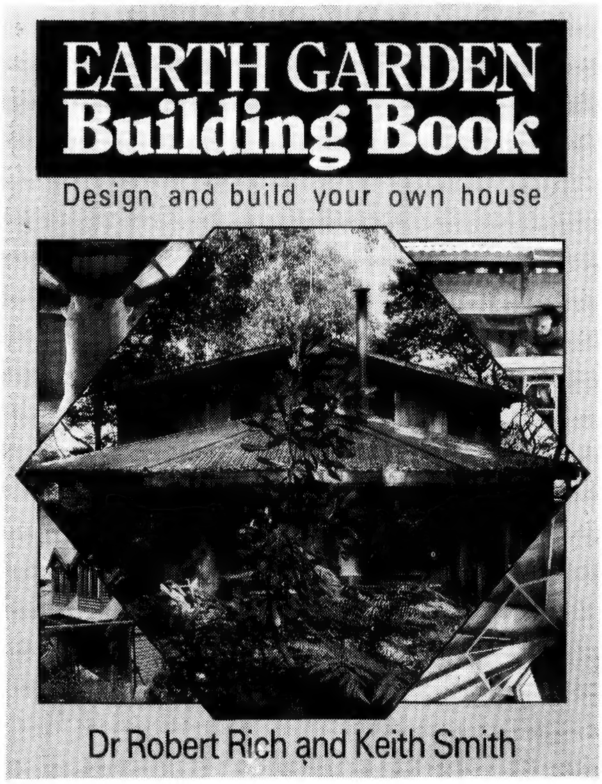
EARTH GARDEN BOOKS

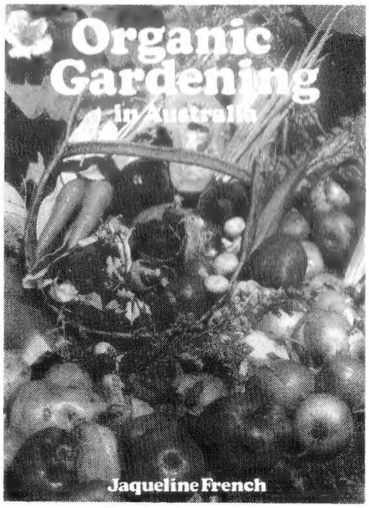
Order form on page 56


EARTH GARDEN
Building Book
Design and build your own house
Dr Robert Rich and Keith Smith

EARTH GARDEN BUILDING BOOK
Design and build your own house
Dr Robert Rich and Keith Smith
Nelson, 1987, 315 pages, illustrated, large format paperback. $24.95 posted.

This is the book many people have been waiting for since they first dreamt of building their own home from natural materials in harmony with their surroundings. It answers all the questions for Australian owner-builders. It's a 'practical book for dreamers' and it faces the difficult subjects square on. What the authors have done is show how anyone of average intelligence and reasonable health can build their own home, and probably not end up with a 25 year mortgage at the end of it all.

"This book is intended to provide an antidote to the stereotyped Australian suburban sprawl of red brick houses with red tile roofs, set squarely in a rectangle of ground," said authors Bob Rich, and former Earth Garden publisher and editor, Keith Smith.



ORGANIC GARDENING IN AUSTRALIA
by Jackie French, 192 pages, large format hardcover, Reed.

JackieFrench, a regular writer for EG, has written this comprehensive guide for a wholistic approach to organic gardening. This book will teach you how to work with the elements of your garden, rather than against them, for a productive and healthy supply of chemical-free food. Jackie's book is a vital aid for treading the Earth Garden path to self-sufficiency.

AT LAST! EG BINDERS TO PROTECT YOUR COLLECTION

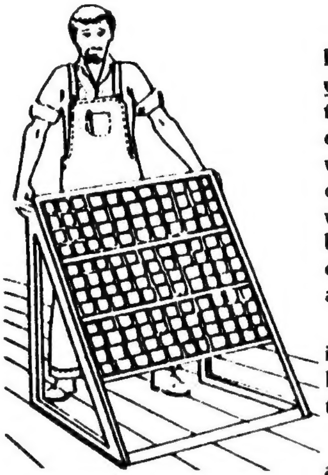
These sturdy magazine binders have recently been produced to protect your collection of back issues. Each binder snugly holds 12 copies of Earth Garden, and prevents tears, dog ears and bent pages. The binders are made from a tough, 'deer-hide tan' vinyl, with the Earth Garden name and logo stamped in gold foil on the cover and spine.

$11.50 each, posted.

HARD TIMES HANDBOOK

Survive — and thrive!
Keith & Irene Smith
Nelson, 1986, 204 pages, 70 illustrations. ☐ $8.50 posted.

This is the second, corrected edition of our practical book of skills, strategies and short-cuts for urban survival. HARD TIMES HANDBOOK outlines a new, self-reliant approach to city living. It tells you how to do more with less, be prepared for food shortages and emergencies, save energy, make money without a job and manage your food supply. Make bread, yoghurt, soft cheese, candles and soap. There are 150 recipes for cheap, healthy tucker and 180 money-saving household hints.



ENERGY WORKS!
Home Energy Systems
By Keith Smith
Nelson, Melbourne, 1985, large format paperback, 211 pages, illustrated. ☐ $19.95 posted.

Why spend the rest of your life paying someone else for your electricity? Here's how to plug in the renewable energy of the sun, wind or water using an efficient 12V or 240V solar electric system, wind generator or water turbine. Run lights, radio, TV, computers, tools and appliances wherever you live.

"The major part of this book is devoted to practical issues, hardware and actual installations.

". . . This book should appeal to anyone wth an interest in the supply of energy to weekenders, farms or other remote dwellings or even to the suburban household." — Dr C. J. L. Cornish of Murdoch University, WA, in *APACE WA Newletter*.

EARTH GARDEN

Number 58 — December '87/January '88

Front cover: Students from Morphett Vale High School in SouthAustralia designed and built their own solar powered car to compete in the World Solar Challenge. Sandra Hand works as a potter at Studio Altenberg at Braidwood in New South Wales. **Back cover**: a view towards Quamby Bluff near Jackey's Marsh in Tasmania — part of the National Estate and site of the Wilderness Society 1988 Forest Festival (photograph courtesy of Sean Cadman).

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Founded by Keith & Irene Smith, 1972.

EARTH GARDEN is Australia's original journal of self-sufficiency and alternatives. It is intended as a forum of practical ideas, shared knowledge, sources and to point towards alternatives to unfulfilling consumerist lifestyles.

It's about putting a roof over your head, growing your own food, using alternative energy systems, and surviving — and thriving in the city or the bush, with the inner changes which follow when you're in tune with Nature.

Published and edited by Camille and Alan Thomas.

Book Review Editor: Sophie Masson.

Illustrations by Bronwyn Halls.

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Contributions to EARTH GARDEN are welcome — sharing information and experiences with other readers strengthens the network of Earth Gardeners.

Photos, illustrations and diagrams are important when sending us contributions.

Subscribers are sustainers — for subscription details see page 48.

We welcome advertisements appropriate to the aims and ideals of EARTH GARDEN, but reserve the right to refuse ads at our discretion. Write to us for display rates.

Printed by Industrial Printing & Publicity, 122 Dover St, Richmond, 3121, thanks to Alby, Geoff, John, Clarence and the crew.

Distributed to newsagents by Gordon & Gotch Ltd, Melbourne.

Dear readers,

Welcome to the December issue of Earth Garden. This month we've arrived in your letter box, cream can or local newsagent a little early, so that if you want to order books, back issues or renew your subscription before Christmas, there'll be just enough time (we will need to receive orders for Christmas presents by 11 December).

At the moment, we've managed to keep the 1988 subscription price for Earth Garden at $15, but with a ten percent increase in our printing costs, and higher postage costs now that we're eight pages thicker, we don't know how long this price will last.

So, (subtle hint about to be dropped) it might be a good idea to renew your subscription before the end of the year. Another quiet little incentive for returning your subscription slip quickly (that is, before we send out reminders) is that all readers who do so will be in the running to win a prize: a set of all current Earth Garden books and magazines. That includes all 58 issues of EG, five new EG binders to keep them safe, one copy of the *Earth Garden Building Book, ENERGY WORKS!*, Jackie French's *Organic Gardening in Australia*, and the *Hard Times Handbook*. If the winner already has some of these books and magazines, we'll extend their subscription to the value of what they already have. That could be a life subscription for some people! So if you're not already a regular subscriber, now's a good time to become one. We'll announce the winner in the February issue, and we can assure you that the person who pulls the winning name from the barrel will be completely impartial: Tane's not yet three so he can't read!

We chickened out of unveiling Earth Garden's new banner this issue so we'll bring it to you in the first issue for the new year. However, this issue marks the start of a new element of Earth Garden which you may have noticed on the cover — a tree tax. The tree tax is incorporated into the cover price so for no extra cost, every EG you buy contributes to reforesting Australia (see the Rainforest Campaign article on page 48 for more details).

There are at least four festivals being staged this summer, in southern Australia alone, one or more of which you might consider attending. They are a great chance to meet like-minded people, or learn about anything from alternative energy systems, massage and organic gardening, to native trees and animals. The three of us plan to go to the Wilderness Society Forest Festival in Tasmania in February and hope to make it up to the Bredbo Confest for at least a day or so, so we might see you at one or other of them.

In this issue we've managed to fulfill a big goal we had for 1987: to return Earth Garden to the size it was under Keith and Irene's 'committee of two' (56 pages each issue). We're very pleased that we've all been able to manage this (us, readers, and especially EG's many contributors and regular writers). It means that there will now be one and a half times as many pages of EG each year as there used to be. Now that we have achieved this aim our next plan is gradually to bring back each date of publication until we are publishing in the previous month of issue (that is, instead of appearing in mid-February, April, June and August, we will be appearing in early February, late March, late May, mid July and mid September etc). We hope that's not too confusing but many readers have suggested this change and we thought that a gradual move would be better than missing out an issue and having a holiday, or trying to produce an extra issue (well . . . Alan was pretty keen on a holiday!).

We were very pleased to be told last month that Earth Garden was one of two magazines to be awarded a 'high commendation' in recent magazine publishing awards by an Australian magazine for publishers, *Desktop Publishing*. We hope you've enjoyed our first 12 months of publishing Earth Garden — we're looking forward to the coming year with a lot less trepidation than in November '86.

Happy reading,

Camille & Alan

The Earth Gardeners

Dear Camille & Alan,

Some EG readers will remember the episode we made in 1975 for ABCTV's *A Big Country* in which we visited friends, mainly around the Castlemaine area in Victoria, and talked about the 'back to the earth' movement, organic gardening and keeping animals on a smallholding. A highlight was a visit to the mudbrick home of artists Neil Douglas and Abbie Heathcote, familiar to our readers. Now, 12 years later, the ABC has selected seven programmes from the Big Country series to re-present with a 'Where are they now?' update at the end.

The new programme will be introduced by author Colleen McCullough. *The Earth Gardeners*, the third in the series, will be shown on Sunday December 20 at 6:30 pm.

'Smith's Guide: SYDNEY' is rapidly progressing and will be in print in January 1988.

Peace and love,

Irene & Keith Smith
Smith's Guides, PO Box 378,
Epping, NSW 2121.

Earth People Write

Letters to Earth Garden from readers are *always* very welcome.

Mudbricks in the Far North

Dear Camille and Alan,

You will be pleased to hear that since my letter in EG 55 I have had contact with a local builder/engineer/draftsman, who will draw up plans for a mudbrick house for me for a very reasonable fee and has given me much help and advice regarding my soil. I'm told it's about 30 feet of topsoil; he also put me in touch with a company in Cairns (ITS Hollingworth) who will test my bricks and advise me further.

I am at this stage experimenting to find the best brick mixture, as follows. Soil only (useless — cannot even be handled). Soil and straw (slightly better but still crumbly). Soil and 1 percent cement and straw (still a very weak mix). Soil, straw and 3 percent cement (a good strong brick). I have gone on to try soil and cement with no straw (10 to 1 soil to cement) and feel that the 3 percent with straw is better. I am waiting for bricks of soil, straw and 1 part cement to 5 parts soil to dry then I shall take some samples to be tested. I will also take a shoe box full of soil in case my bricks fail, in which case they will test the soil for contents and advise me further.

I have a feeling our soil has a high lime content, it is also a bright orangey red in colour so the addition of cement tones down the colour somewhat to a less glaring and more restful shade. I have also decided to use a smaller brick and Swedish Bond which will enable me to incorporate the iron bars that must be built into the walls at four foot intervals (cyclone rating).

You probably saw the dreadful incident that happened in this small town on television*. May I just say that though I personally have no leanings either way, as it will not affect me to any great degree I'm sure, whether World Heritage is declared or not, I do not and will not condone violence or obscene language no matter what the cause. I saw the incident, I heard the language and I was shocked and sickened by it all as I am sure were many decent peace loving people in the area. It is sad to think that such a beautiful place, for it truly is one of Nature's masterpieces, should through such human folly be remembered throughout this story for such an act of thoughtless hysteria.

Forgive them for they know not what they do. Peace and tranquillity to you,

Shirley B Livesey, Ravenshoe, QLD 4872.

**the threats and physical assault recently on the new Federal Environment Minister, Senator Graham Richardson, during a town debate at Ravenshoe on the proposed listing of North Queensland rainforests for World Heritage Listing.*

Bob's Bonza brickmaker!

Dear Earth Garden,

We are just starting to make mudbricks for our house. We were quite interested in your article in EG 55 by Bob Rich and would like to have a go at making Bob's Bonza Brickmaker.

Kate Davey, Margate, Tasmania, 7153.

Botanic Gardens invitation

Dear Camille and Alan,

Our Botanic Garden staff always look forward to receiving and sharing your Earth Garden magazine.

Visitors to Brisbane may be interested to know and come and inspect our Botanic Gardens (on the slopes of Mt Coot-tha) and all it has to offer Earth Garden people.

As we are primarily a teaching and learning institution we endeavour to grow as wide and varied range of exotic and native plants (approximately 14,000 species) with a particular emphasis on economic crops and plants in our extensive Teaching Gardens.

Our Fruit Tree Garden now contains some 80 species and cultivated varieties from tropical to temperate fruiting trees and vines.

The Botanic Gardens Library (open 9-4.30 pm Monday to Friday and 9.30-11.30 am Saturday) is well stocked with Earth Garden related titles. For example we have just produced a list of the 58 herb book titles available on loan to Brisbane ratepayers or for reference reading for people out of town.

Our free public garden information service is available phone: (07) 377-8898/3/1, office hours 8.00 am to 4.00 pm weekdays.

Botanic Gardens are unable to sell seeds and cuttings to the public, however to increase our collections of plants we do 'swap' with interested individuals and organisations for our mutual benefit.

Another 'Garden' within the

Botanic Gardens that may be of interest to Earth Garden readers is the Herb and Fragrant Garden. Here extensive collections of plants are being grown and a sight and smell tour is most rewarding!

Best wishes with the production of your most worthwhile publication. Yours sincerely,

Ross D McKinnon, Curator, Botanic Gardens, Mt Coot-tha Rd, Toowong, QLD 4066.

Chinese one-cylinder tractors

Dear Earth Gardeners,

I came across a reference once to a single cylinder diesel ride-on small tractor made in China. The agent I recall was in Rock Valley, northern NSW. That is reasonably nearby and I would like to see one. How does it go? Any help would be appreciated. Yours,

Nick Ashton, Paddy's Flat Rd, via Tabulam, NSW 2470.

WA owner builders

Dear Editors,

I would like to hear from owner builders and intending owner builders in Western Australia. I would also like to hear from any folk who have or intend to set up a shared equity co-operative. With thanks, **Ms B Kyneur, 237 Mill Point Road, South Perth 6151.**

Dear EG readers,

I'm writing this letter in the hope of catching up with an old friend and fellow Earth Gardener whom I haven't seen for many years.

His name is Brian O'Dowd, last known living in Kentlyn near Campbelltown, New South Wales. Brian, if you would like to contact me I would love to hear from you — good friends are pearls without price! My address is PO Box 22, Nimmitabel, NSW 2631.

Yes, I finally made it to the bush and am loving every minute — *still* have the rosemary bush you gave me, too. Sincerely,

Charmainne Doherty, Nimmitabel, New South Wales.

Dear Alan & Camille,

With due respect to the splendid efforts of Keith and Irene Smith from the founding days of Earth Garden, I congratulate you both not only for continuing this delightful publication but also for the journalistic expertise and general improvements which have followed your installation as editors. Phew. In five words, EG is better than ever.

The mixed bag of offerings in EG 57 was excellent, specifically Marja Fitzgerald's essay on busybodies; Jackie French's innovative season-by-season gardening column (in conjunction with Arthur Brotheridge's series of food self-sufficiency); and Bob Rich's provocative call for a "quiet revolution".

Well done. Finally, I would welcome any letters from people in communities in the Albury, Wodonga, Beechworth districts, particularly on the subject of vegetable gardening. Fraternally,

Neville Penton, Balmain, NSW 2041.

Milking a house cow

Dear Sir/Madam,

Do you have a back copy containing exactly how and when to milk a cow for family use. Also does it need treating in any way before drinking?

A list of your back copies would be useful, but the information above I'd need as soon as possible. Thank you,

Mrs S Garlinge.

Dear reader,

Back issue no 25 shows you the hand position for milking a cow. I can give you a bit of information on cows: I used to be a dairymaid myself and have milked many cows by hand.

Cows produce milk 9 months of the year — you can milk them twice a day 8 or 9 hours apart. Some dairy farmers leave under six hours between milking. Some people milk once a day but the cow is more prone to catching mastitis (unless she has a calf under tow of course). It doesn't matter too much when you milk your cow though it's important to have a routine as your cow will be waiting expectantly when she knows she is due to be milked. Some dairyfarmers milk at midday and midnight under lights!

—Camille.

Owner building in the Philippines

Dear Camille and Alan,

Please send me one copy of the EG Building Book as soon as possible for my friends in the Philippines. They now have land, and I received their request last week on how to go about building a house on same. They said they have black loam soil! Would this do in making mud bricks etc? By the way, re the coming Depression, I thank almighty God for young people like you, who value God's free gifts. May He bless the work of your hands. Love,

Marie O'Neill, Mt Pritchard, NSW 2170.

Dear Marie,

On pages 96 and 97 of the Earth Garden Building Book Bob Rich discusses a simple test to show the composition of the soil, ie the sand, silt and clay content, and the proportions of cement if cement needs to be added to the mudbrick mixture. We wish your Filipino friends the best of luck with their building.

—Camille and Alan.

Realistic brickmaking totals

Dear Alan and Camille,

We've been making mudbricks for the past two months on week ends and now have a grand total of 650. Some books suggest that you can make 100 bricks in a day with ease, but we find that by the time we've shovelled mud, mixed it and made the bricks, about 50 a day is more realistic and of course they have to be trimmed and stacked as well, once dry. We're ready to set out and dig our footings now whilst continuing to make bricks, so we will be very interested in the new book.

I like the new format of Earth Garden, keep it up. Peace to you, take it easy,
Mary Buteux, Main Rd, Laguna NSW 2325.

East Gippsland organic summer school

Dear Camille, Alan and readers,

I would like to extend an invitation to you all to take part in our Organic Summer School over Australia Day weekend 23-24-25th of January 1988. This will be the second year that we have run the school. Last year, our first attempt, was very successful with about 200 adults and children attending, from as far away as Queensland and South Australia.

This year we have a great variety of speakers. For those very new, and not so new to organic growing we have Peter Abetz, who will be speaking on organic gardening for beginners. Don Francis from Geelong Organic Growers will be there to tell us how we can save our own seeds so that we may use more viable, clean and safe seed in our gardening and farming.

For those who farm larger properties, Peter Grosvenor from Mt Gambier will be discussing ways in which farmers can convert to organic methods of building soil fertility. Peter has farmed for over 50 years, the last 25 years organically, and today has three farms, cropping and grazing, of over 3000 acres. Peter will be conducting discussion workshops to small groups over the weekend.

Nan Oates, co-author of *Trees for the Back Paddock,* will be speaking, naturally, about tree growing on farms; and Terry White, well-known editor of international *Permaculture* magazine and at present working as Community Education Officer for the Victorian Government's Salinity Control Program, will cover salinity and de-forestation using talk, song and slides.

We will hear from a member of our Organic Agriculture Association, Dr Rob Seiler, who is a veterinarian and will speak on some aspects of animal care. Talks on appropriate technology and humanistic tools, that is, tools that do not divorce farmers from the land, will be led by Dr Frank Fisher, from the Department of Environmental Science, at Monash University.

Hands-on workshops will include setting up a no-dig garden, fruit tree budding, fencing and more. There will be an opportunity to visit a small self-sufficient style organic farm over the weekend.

The school is held at a beautiful bushland campsite on the shores of Lake Victoria, just ten minutes from Bairnsdale. There are plenty of unpowered campsites, good showers and toilets. The lakeshore offers good swimming, fishing and relaxing. All this is for only $30 per head including camping fee, with no charge for dependent children. Light lunches, morning and afternoon snacks and drinks will be available.

Please write to the East Gippsland Organic Agriculture Association, at the address below for details and a program. GO ORGANIC FOR FOOD YOU CAN TRUST Hoping to see you there. Sincerely,
Audrey Porter, Publicity Officer for the East Gippsland Organic Agriculture Association, Box 33 Wiseleigh, Victoria, 3885.

Solar trackers

Dear Editors,

I found the article in EG57 on an experimental time controlled solar tracker very interesting, but I wonder how many readers could comprehend the electronic logic diagram?

Transforming this functional diagram into a working electronic circuit is not within the realm of the average handyperson. I doubt the value of giving incomplete practical detail, and would like to discuss compromises inherent in using various items of hardware.

The concept of tracking the sun using discrete positions for set time periods is appropriate for an electric motor drive, as continuous tracking would require a much more complex set-up, which may be less efficient.

The Kambrook KD36 timer program is limited to four 'on' periods and four 'off' periods in 24 hours. This is quite adequate for the solar tracker design presented in EG 57.

The KD 36 time clock exhibits some sensitivity to electrical transients, and under the worst conditions can be temporarily disabled. This problem is curable by taking more care with layout and possibly adding surge suppression devices.

When modified as in EG 45 and operated on 12 V DC, the KD36 timer consumes about 10 mA in the 'off' condition. An extra 50 mA is drawn (by internal relay) when the timer is 'on'.

In using electronics to control a solar tracker the quiescent current consumed by the control circuit obviously reduces the advantage of tracking, and definitely needs to be assessed for any particular design. An optimised circuit could use CMOS devices to replace the internal relay in the KD36 unit, and a SIPMOS power transistor to replace the output relay, to give a substantial saving in the control current drain.

Reed switches are a good choice as position input devices, but may require 'debouncing' to avoid false triggering.

We are bound to see further development in solar trackers!
Ted Reimer, Springwood, NSW 2777.

Dear friends,

I really enjoyed your article on Arthur Brotheridge, I never go to Devonport without paying him a visit. Thanking you for a great magazine.
Allan Wicks, Wellington St, Geurie, NSW 2831.

Dear Camille,

Both my husband and I think you have a super magazine, we have just purchased eight acres of land near Northam in Western Australia so the magazine articles are great. I remain yours truly,
Mrs Annette Jackson, Kambalda, WA 6442.

Good books out of print

Dear Camille and Alan,

Do you know where I can buy Helen and Scott Nearing's *Living the Good Life* and Karl and Sue Schwenke's *Build your own Stone House* (Garden Way 1975)? Both are mentioned in the new Earth Garden Building Book on page 170. Regards,

Ray Duplain, Deakin University, 3217.

Dear Ray,

Both these books are American and are ten or more years old. Build your own Stone House *is now out of print.* Living the Good Life *can be ordered for you from America through the Whole Earth Bookstore, 83 Bourke St, Melbourne, 3000. Both these books may be found in second-hand bookshops. Another option is to try libraries. I hope this is some help to you.*

—Camille

Dear Earth Garden,

We have enjoyed Earth Garden enormously since I first discovered it in a newsagent about three years ago. The ideas expressed are interesting and practical and the motivation, dedication and awareness of the contributors always impresses me.

As I also want to eventually work for myself in my own way, I find others' accounts of their successes and experiences very encouraging. Thank you for a fine magazine. Yours sincerely,

Nola Younghusband, Dulwich Hill, NSW 2203.

Help wanted for building

Dear friends,

Thank you for your answers to our previous advertisement in LAND LINES. We are progressing slowly but with the longer days it is good for building and other work in order to maintain the farm — and at least one quick swim in the dam to cool us off. Our latest is a flying fox across the dam — not for the faint hearted.

Our next project is to start building a facility for many uses, one of which is to cater for day or weekend outings and youth camps to encourage people of all ages to get the feel of the natural environment as they walk (or sit) amongst our lightly timbered forest with small sandstone gullies.

We need your *help* in way of design of building and knowledge of running camps for Christian Youth Groups. Yours,

Dan & Debbie Bacon, Cawongla Rd, Rock Valley, NSW 2480.

Demystifying wiring diagrams

Dear Camille and Alan,

Like Valerie Langdon in EG57 I do not understand much of the electrical information you publish, but I would like to.

Would it be possible to publish an article that would explain the basics of electricity, simply define terms, and educate the uninitiated in reading electrical diagrams? Thanks for keeping the magazine going.

Anne Riethmuller, Dalby, Queensland 4405.

Dear Anne,

What you've suggested sounds like a good idea. We will try to organise such an article in the next few issues or so, one which might lead up to as step-by-step explanation of some of the wiring diagrams we've printed in recent issues. Thank you for the suggestion

—Alan.

Lobbying for herb books

Dear Camille,

I too would like to see a coloured picture herb book on the market, in answer to Eric Honig of North Geelong, Victoria, in EG 57. I am only interested in non-poisonous healing herbs — healing herbs and trees, bark roots, healing herb teas etc, not just herbs for taste and flavour. I find myself much better on a natural diet. I am a vegetarian and have found much benefit in red clover tea.

It is supposed to help cure ulcers, cancers and with blue violet, and whooping cough.

I am sure plenty of material would flow to keep a coloured herb book going. All herbs have coloured flowers and all are for different complaints and work best in conjunction with a natural diet.

English winters kept me indoors and I studied health and doctors' books from eight years old with my teacher mother. Between us we can surely send some material and hopefully buy the first book.

Mrs D Magden, Lower King, WA 6332.

It is a pity that Keith's 'Illustrated Earth Garden Herbal' is out of print.

Recently we discovered a good looking Australian herb book which may be reviewed in a forthcoming EARTH GARDEN REVIEWS: 'An Australian Herbal', by Penny Woodward, is published by Hyland House.

It is a 180 page hardcover book and retails for around $29.95. There is a section on medicinal herbs, other sections from drying to dyeing, and even a list of herb society names and addresses.

—Alan.

Electrical interference

Dear Camille and Alan,

To Barry Mallett EG 56 re TV interference. Some years ago we had the same problem. My son, who is an electronics technician, said this was caused by old or faulty fluorescent tubes, or tubes not properly in place, or new inverters required.

So if they are in his own home he may be able to do something about it, if in another building nearby he may not be able to do so.

Good luck,

Lois Harpham, Aitkenvale, Queensland 4814.

Jackie French also dealt with this problem in EG 57.

—Camille.

access

Tasmanian Wilderness Society Forest Festival

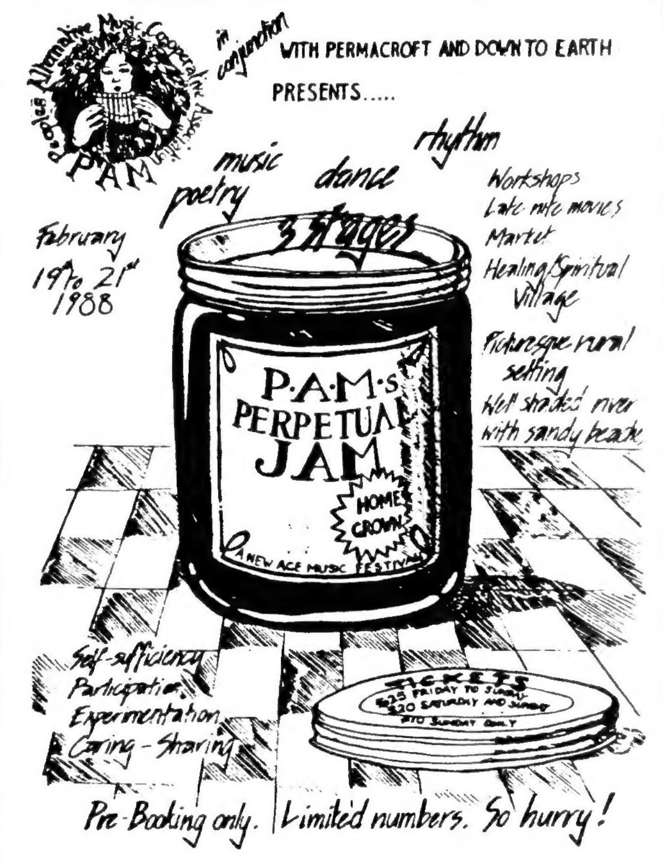
6 & 7 February, 1988

Jackey's Marsh, National Estate Forest, Tasmania.

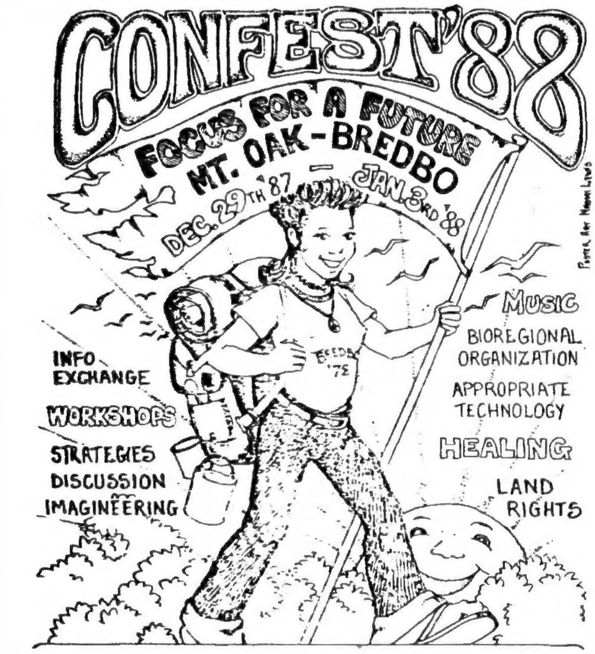
See story on page 29 of this issue for further details.

Organic Gardening Summer School

23 — 25 January, 1988 (Australia Day weekend). On the shores of Lake Victoria, 10 minutes from Bairnsdale in East Gippsland, Victoria. For more information see Earth People Write, this issue.



Bookings and info: phone (03) 375 2644, or write:
PAM c/- 62 Pascoe Vale Rd, Moonee Ponds, 3039.



Confest '88: Mt Oak, Bredbo, New South Wales

DECEMBER 29 — JANUARY 3

This year the Confest, with support from the Down To Earth group, will be held at the Mt Oak community at Bredbo in New South Wales from 29 December, 1987 to 3 January, 1988. Ten years after the original Bredbo Confest, this year's festival will be a resurgence of the call for a new society. The principles for this year's Confest are: decentralisation, access to decision making, information sharing, ecological sensitivity, participation and democracy, and realistic economics. The Confest will feature workshops, music, healing, alternative energy displays, massage, New Age philosophies, and much more.

Confest '88, PO Box 6, Cooma, NSW, 2630.

How to get to Mt Oak Community (Confest '88): *Travel 7.5 km south of Bredbo *Turn off the highway at Billilingra Road *Look for the row of pine trees on the ridgeline in the distance *You're there!

A couple of nuts in gumboots

by Pamela Odijk*

Wauchope, New South Wales.

I SOMETIMES look at my high stiletto shoes which I have worn once since I left Sydney. They're in the wardrobe along with my other fancy city clothes and my husband's business suits, white shirts and ties. They are rarely worn these days.

The horses, chickens and ducks couldn't care less what we wear, and I'm quite sure that the sight of me tottering down the hill in stiletto heels, chook bucket in one hand, egg bucket in the other, lettuce tucked under one arm for the ducks and a loaf of stale bread for the horses tucked under the other would really give the kookaburras something to laugh about.

Only a few months ago we decided to get off the merry-go-round of stressful city living and move to the country. Of course everyone said we were mad. "But what will you d*o?*" they asked. "You'll be bored stiff," they said. "They don't make high heeled gumboots!" they chided, eyeing my high heels.

"You'll be back to the city after a while when you're sick of it," they said. Well, we have plenty to do, we haven't been bored for one minute, and no, they don't make high heeled gumboots! And for as long as we can manage to do so, we will remain out of the city.

This is the year we promised ourselves, saved for, and hope to prolong into many more years. Many people save for overseas trips which are over in a month or so. We decided instead to save to buy a car, pay in advance for a year's lease on a house in the country and then try and make ends meet from then on the best way we could.

We left our city jobs with their comfortable salaries (half of which went in rent, fares and inflated prices anyway), and looked for the last time at the people on St Leonard's Station poised to trample each other underfoot for standing space on overcrowded peak-hour trains. We told the agent we did not want to extend the lease, with its sky high rent, on our house, packed our possessions into the removalist's van and our sturdy trailer and together with the only livestock we owned at the time, Sam the cat, set off for our country retreat. We beat the peak hour traffic out of the city limits and breathed a sigh of relief as we drove past the last vandalised street sign and phone box.

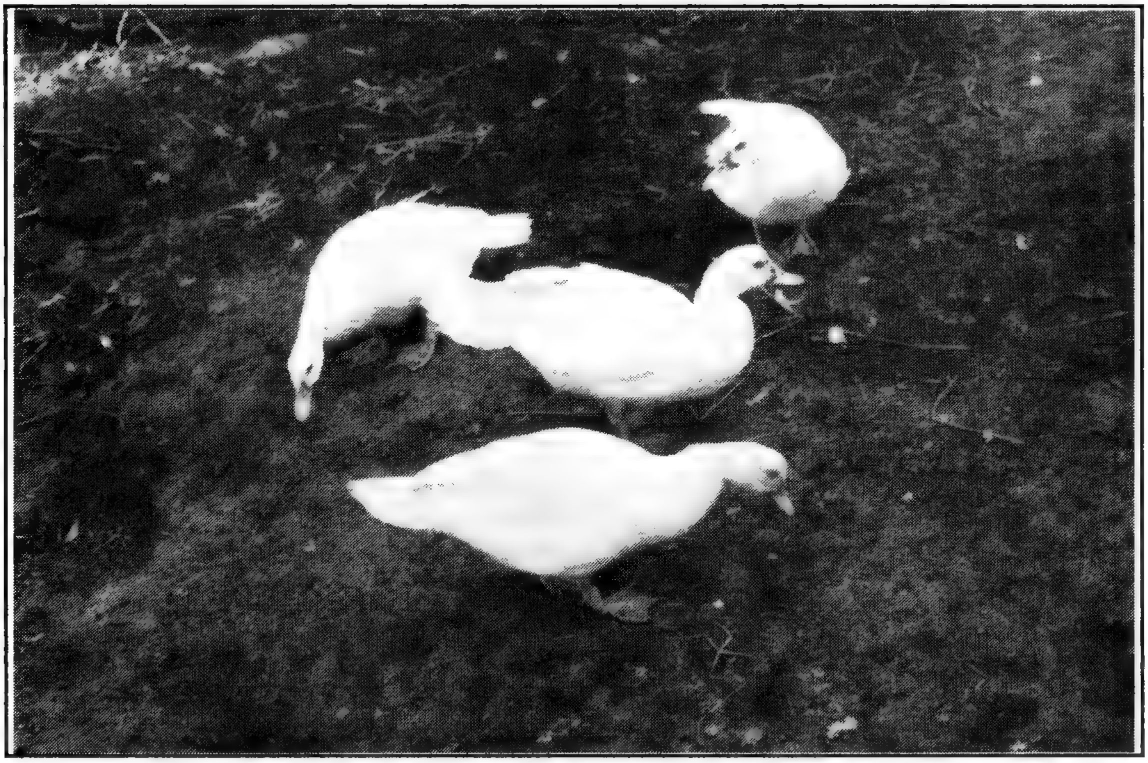
We had done it. We had fought and won against the pessimists and the system that had made us feel enslaved for so long. We had done the hard bit. We had got off the merry-go-round! For us, getting off has been the hardest part, and you usually have to *jump* off because at no time does the merry-go-round and those who operate it, allow it to stop for people to get off in a leisurely or dignified way. But once you get off, it becomes clear that those still on it aren't going anywhere except round, and round and round . . . As for us, although we did not know, in our dizzy state, which way to head, we had at least stopped going round and round. But part of the excitement and mystery was discovering, in the course of our special year, about our future directions.

The jobs we held in the city had no relevance to our chosen country area so we had decided to use our second jobs. Up until now these had been regarded as 'paying hobbies' by the taxman but are activities which are worthwhile to us. I was offered a publishing contract for a series of children's books soon after we took up residence in the bush. The advance on this, although most was spent preparing the manuscripts for publication, did give us some money to live on.

Herman began setting up his photographic business which is still growing slowly. However, like everything in the country, it takes time. This was the first lesson we were to learn coming from the hurly burly of city living where everything is wanted yesterday, but after a while we learned to adjust to the comfortable pace of 'later on', and 'one day' and 'sometime'. In the course of establishing the photographic business we worked the local shows and other functions and gradually met the local people. Although not a source of great wealth this has been a source of great personal satisfaction and, as we had suspected for so long, this for us, has a greater value.

Our livestock has increased in number and variety. Sam the cat is the only unproductive livestock although he has taken the duties of mouse catcher very seriously. We purchased some battery hens and Herman made them a splendid retirement home a short distance from the house. Their house is a structure of corrugated iron, wire netting, plastic and two old unwanted wardrobes (I wonder if Loretta and David would like them back sometime!), straw and nesting boxes donated by a local vegie man. The hens have the freedom of any portion of six acres on which to roam during the day and return voluntarily to their enclosure at night. They show their appreciation for their improved living conditions by providing us with marvellous eggs which are unbelievable to our occasional city visitors. They are the best fed hens in the district and even come to us to be patted!

Six horses have gradually eaten the high grass on the bottom paddocks. A seventh horse arrived this week — a tiny filly whose antics amuse and delight us. They are not our horses, we have them on agistment, sharing their com-



Pamela's family of ducks: Esmerelda, Emma, Padalong and Ping.

pany and enjoying it. They also come to be patted and be given treats of bread, apples or carrots. We have also acquired four ducks named Esmerelda, Emma, Padalong and Ping who are recent arrivals and have a duck house near the chickens. When they have settled down sufficiently we will allocate them a pond.

We may not have money in the bank but the cupboards are full of home made food and preserves as were my grandmother's and mother's cupboards in the days of my country childhood. More food grows in the well-organised vegetable garden which Herman planted and made possum and wallaby proof. The fruit trees are blossoming again after having supplied us earlier in the year with apples, lemons, grapefruit and passionfruit. Even the front and back lawn supplies us regularly with mushrooms. We eat very well in the country and for a fraction of the city food bills. And because I enjoy cooking, this is another source of pleasure which my fast pace city lifestyle used to relegate to a chore.

We no longer have high heating costs. Our country house has an open fire. Wood we gather from the roadside in our trailer. A solar hot water system supplies the rest of our needs and we have learned to curb our use of water to the capacity of our tanks.

And it's nice to stand and hear the wind and not the traffic; to hear the animals from nearby farms and not people; to sit at my desk and have a view of the trees and the river instead of a terminal, the person opposite and a filing cabinet; and to lie in bed at night and see the stars instead of street lights! The ducks, chickens and horses are better company than city crowds and queues. And we are so busy in the country we barely have time for our university courses, never mind getting bored. I'm becoming very fond of my flat gumboots.

*photographs by Herman Odijk.

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- Rainbow power rises -

The Rainbow Power Company means business

by Peter van der Wyk

Nimbin, New South Wales.

OVER the years there has been a continued interest around Nimbin in alternative and appropriate energy systems — electricity in particular. In September of 1980 I helped organise an alternative energy display at the Lismore Library (about 30 km from Nimbin) and then in August of 1982 there was a repeat at the Lismore Technical College during Education Week. As a result of the interest and enthusiasm that these displays generated, as well as the expertise that was brought together, a group was formed called ACTA (Appropriate Community Technology Association) which has held ongoing monthly meetings.

Rightly or wrongly Nimbin is seen as the alternative lifestyle capital of Australia. Nimbin is certainly famous because we frequently attract the media and have many tourists stopping in the village all year round. But apart from the gaily painted shop fronts there has been a lack of evidence of the cause for Nimbin's fame. After all these years Nimbin finally has a shop that specialises in an alternative to being connected to the 240 Volt power grid (low voltage home energy systems). This shop is staffed by shareholders in the recently established Rainbow Power Company.

A Rainbow Power Company display staffed by two shareholders: Dave Lambert and one of Australia's genuine wizards of appropriate energy systems: Peter Pedals.

The Rainbow Power Company was my dream-child a number of years ago and I have been planting seeds hoping that the dream would eventually come to fruition. I knew that I could not manage such a venture on my own and it needed more skills than could be gathered in a group such as ACTA. We needed legal, financial and entrepreneurial skills to name but a few and more energy than any one individual can muster.

In the first half of 1987 all the people with the necessary skills indicated that they liked the concept and would lend a hand so that this dream could be realised. It was important that the venture be not only financially viable but profitable and ethical at the same time. On July 1, 1987 the Rainbow Power Company was officially registered as a private company.

The Rainbow Power Company is a Nimbin-owned and operated proprietary company. We are now in the process of building a small factory on the old saw-mill site at Tuntable Falls on land made available by Co-ordination Co-operative. We feel that this factory will set a precedent of creating employment opportunities on a Multiple Occupancy in just the same way as Tuntable Falls was the first Multiple Occupancy. This latest development makes a Multiple Occupancy appear much more like the Israeli Kibbutz.

The factory walls will be made of mudbrick by a mudbrick machine owned and operated by the company. Such machines may be hired or purchased from us. We expect the factory to be completed in about six months.

We established the company to fill the gaps that presently exist in the low-voltage home electrics retail market. We will be dealing primarily with 12 volt systems, not only in generating and storing power but also in the lights and appliances that will operate on such a power supply.

We design and install stand-alone power systems that may rely on any combination of sun, wind and water for the production of such power. We provide all components of such systems throughout Australia as well as an installation service in the north coast area of NSW (loosely referred to as the Rainbow Region).

We carry a wide range of lights, including quartz-halogen and hybrid-fluorescent lights of between 5 watt and 20 watt in power consumption. The Q-H and H-F lights are super-efficient and you will be surprised at how bright they are for such low power consumption. In the way of appliances we will be adapting or redesigning appliances to run directly from a low voltage source but we do carry inverters to power most 240 volt appliances. In fact, we now have a limited supply of 400 watt and 800 watt inverters for only 75 cents per watt.

When the factory is built we will be manufacturing

Nimbin's multi-coloured shopfronts now include the Rainbow Power Company open for business — the shop is a forerunner to a factory at Tuntable Falls.

small-scale hydro-electric systems, heavy-duty 12 volt motors for washing machines and a whole host of electronic gadgets that are presently still in the design stages. We are already producing low voltage power points, rechargeable lanterns, shunt regulators and intelligent adjustable regulators for over-voltage protection on battery systems. We are also involved in non-electrical energy systems such as Hot Tanks (a heavy duty version of Hot Drums).

These products will be sold through the company's retail section, through catalogue sales, and also on a wholesale basis throughout Australia and overseas.

At the moment the products for sale are purchased from existing commercial manufacturers and from local residents working from home workshops. The company will have a research and development section which will test, develop and improve the performance and range of currently available products. While the factory is under construction, a library of available literature is being acquired and documented.

One of the aims of the company is to provide employment to local residents who have a wide range of skills and talents. It is hoped that the factory, once in operation, will be able to provide job training and apprenticeships to a few of our local youth.

There are several very interesting aspects of the structure and function of the Rainbow Power Company. The company is set up in such a way that the workers who are shareholders make all the important decisions.

Shareholders who are not directly involved in the everyday functioning of the company will not have voting rights (they do of course get the dividends) but can gain voting rights after 3 months of involvement. We actively encourage workers to become shareholders if they don't already hold a share.

We are only in our infancy and have plans to broaden our horizons and hope to be producing methane digesters and methane powered appliances in the not too distant future.

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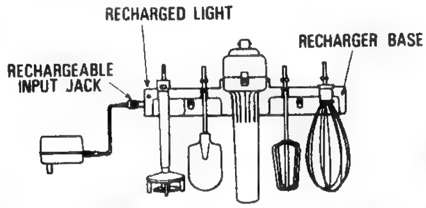

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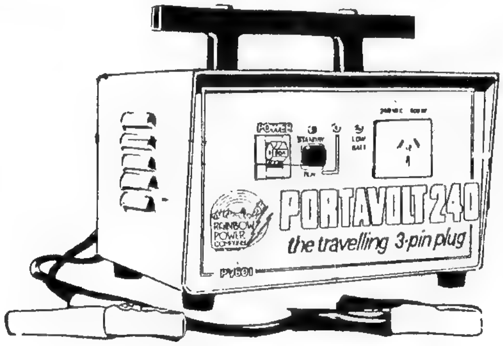

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From old fashioned to organic: bypassing the chemical horrors

by Liz Sinnamon

Nambour, Queensland.

BILL AND Dell McDonald run an organic farm on 14 acres of fertile soil, at Bulimba Creek, Kenilworth, in the Sunshine Coast Hinterland in Queensland. Their property nestles in a small picturesque green valley, with boundaries on the crystal-clear waters of Bulimba Creek.

Lush green watercress grows in abundance on the creek banks, shaded by the coolness of thick rainforest. The McDonalds settled on their land nearly five years ago, after ill health had prompted Bill to retire.

Bill and Dell bought a weatherboard house in Nambour, near the coast, and it was transported over the mountains to be relocated on their property.

Bill talked about organic farming over a lunch of delicious green salad, new potatoes, and roast free-range chicken, accompanied by Dell's wonderful homemade damper and freshly-churned butter.

The family goes back a long way, to a farm at Mt Collery, on the eastern edge of the Darling Downs in Queensland. Organics was not a 'catchword' then, but it was the way farming was practised, where horses were used for power.

Tractors, however, took over in 1948 with extensive tillage to prepare ground for cropping, control weeds and to cope with the low 26 inch rainfall. The family practised crop rotation with fodder and grain crops, using no sprays or fertiliser other than manures produced by the grazing animals on the property. They sold small crops of beans and peas via the Brisbane markets. There was no irrigation but they used heavy mulching.

It was hard work in those days, with animal fodder harvested and stored each season. Bill and Dell — a local farmer's daughter — were married and the family moved to Nambour on the Sunshine Coast to farm a small acreage not far from the township. They grew strawberries, bananas, and small crops and Bill was introduced to the chemical fertilisers and pesticide sprays which were beginning to be used by many farmers.

After selling the farm a few years later Bill and Dell spent some time in the fruit growing areas of Queensland growing and packing fruit.

Bill then began working for CSR establishing a 200 acre plantation of macadamia nut trees. During this time Bill worked with a Department of Primary Industry entomologist (the study of insects), who advised caution with toxic sprays, and developed means of surveying insect infestation to reduce, or, at times, do away with chemical control altogether.

Bill practised large scale mulching, together with the lime and pulverised manure. Concentrated fowl manure rejuvenated any sick trees. Bill also used fowl manure when planting out young trees, with no risk of burning — the manure acts as a long term, slow release nitrogen supply. Although insecticide chemicals were stated to be safe, the company saw fit to have regular blood samples taken from

Bill McDonald works his horse — Barney — on their organic farm near Nambour in Queensland.

people involved in the chemical spraying of the orchard.

Water samples from a nearby creek were also analysed, although tests revealed no chemical pollution. Bill was cautious because the orchard was upstream from the local township water supply. Bill realised at this time the value of large areas of trees, which contribute greatly to the local ecosystem.

Establishing their farm

After 19 years with CSR Bill's health problems developed, and he decided on an early retirement, although continuing to work part time for the CSR as a horticultural consultant. Bill and Dell decided to settle on their own 14 acre property.

After rebuilding and completing their new home, they decided to establish as far as possible a self-sustainable way of life, using renewable energy, such as solar and wind power, and farming organically without the use of petrochemical fertilisers or toxic pesticides.

After dividing the property into small paddocks they bought a cow, donkey and horses. The horses have been trained for ploughing and harrowing tasks, although Bill also uses a small tractor when necessary.

The McDonalds have installed an eight panel solar power unit and a 12 v system wind generator and a petrol-powered generator as backup. They use a 1500 watt inverter to supply 240 v AC current to the house. A separate solar system heats water. They rarely use the petrol motor because sunshine and wind are plentiful in their beautiful valley.

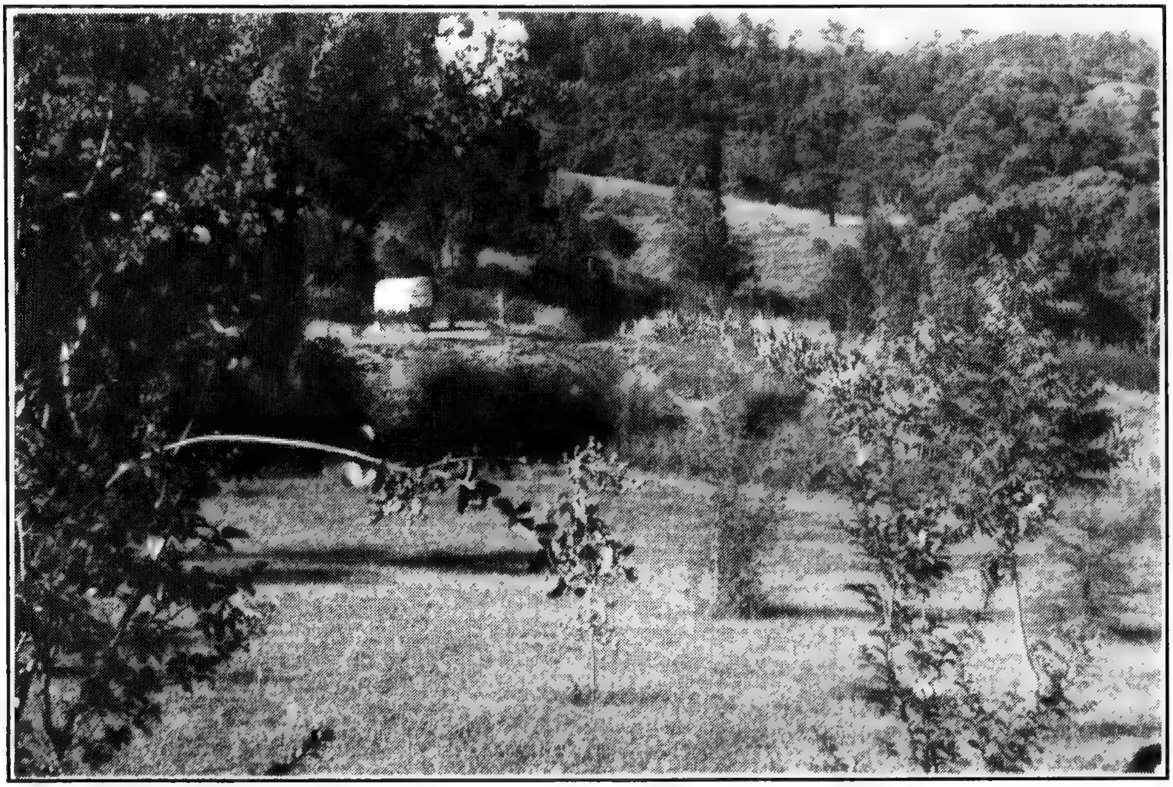
Their property is fairly isolated, enabling the local ecosystem to be reasonably well balanced, with little possibility of toxic sprays drifting from other farms. They have an orchard with macadamia nuts, figs, citrus, mulberries and tamarillos, which have all been mulched heavily with grass-hay obtained from a neighbour's dairy farm. They also have ducks and chickens, together with a small flock of guinea fowls for insect control.

Bill and Dell bought a large truckload of chicken manure and began ploughing and cultivating the soil, incorporating liberal amounts of manure, and planting the first crops. They also installed a seven hp diesel pumping plant to irrigate from Bulimba Creek, because rainfall in the area is seasonal and irrigation is necessary at certain times of the year.

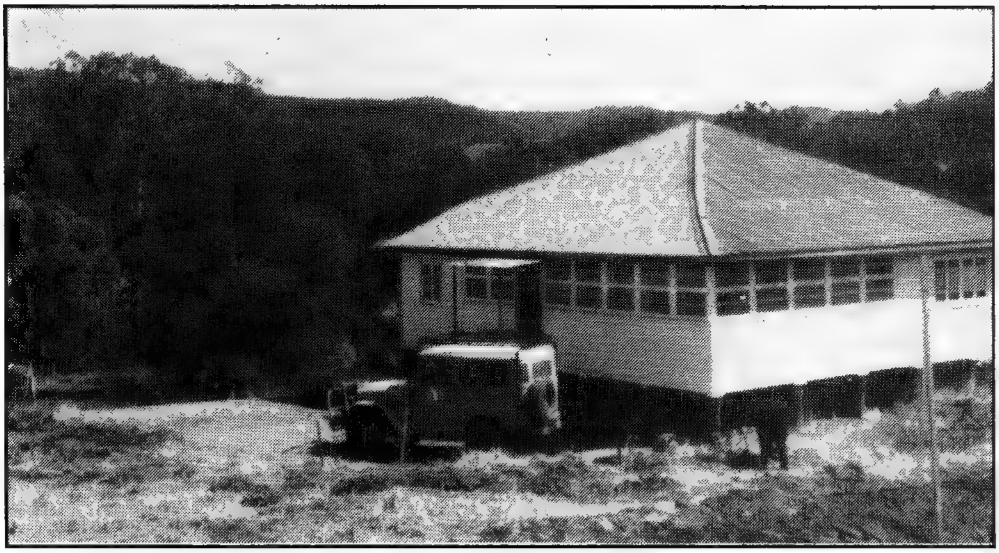
Supplying a market

Although they work long hard hours planting, ploughing and farming, in the peace and quiet of the valley Bill's health has slowly returned, and now with renewed vigour he and Dell have decided to grow fairly large crops of vegetables to market locally as the demand for organically grown vegetables increases almost daily.

This year, Dell and Bill planted zuchini, potatoes, cucumbers, pumpkins, sweet corn, peas, onions, broccoli, cabbage, cauliflowers and strawberries. They have also established a large herb garden and Dell makes various herb 'brews' for insect and disease control.



A view down through the McDonalds' 14 acre property, with their front boundary in the background where they run their produce stall (the white covered stand).



Bill and Dell's farm, near Nambour, is isolated enough to be free of neighbours' drifting toxic sprays, yet their front boundary sees enough traffic to support a thriving roadside produce stall on the old-fashioned 'honour' system.

The McDonalds built a roadside stall to sell their produce on the honour system but they weren't prepared for the demand and unbelievable response to their organically grown vegetables. People often leave notes praising the flavour of the potatoes, peas or broccoli, and Bill and Dell now run a local market stall, as well as supplying a nearby organic food co-op.

After each crop is harvested, Bill allows the farm animals to graze on the remaining forage, manuring the soil at the same time. He always practises crop rotation, and uses the guinea fowl and ducks to feed freely on the farm for insect control and manure, together with a good natural small bird population.

He also uses natural pyrethrum, Dipil, and Dell's various 'herbal witch's brews' to control other pests and diseases. They use lime treatment to raise the pH level of the soil and release the locked up phosphate, making it available to plants, together with potash in the natural crushed rock form. Chemically obtained potash is usually too soluble for retention in the soil and needs frequent applications. Sea-minerals used as a foliar spray are another aid to total plant nutrition.

Converting to organic farming

Bill and Dell have a number of suggestions for people wanting to farm organically. They believe that the change-over to organic farming should be a gradual one, to adjust to the reduced production during the first year or two.

Choose a property with reasonably fertile soil, preferably in an isolated area to avoid 'contamination' from petrochemical farms. Have the soil professionally analysed, even though this is fairly expensive. It will tell you the correct quantities of phosphate, potash and other natural fertilisers to add for quick adjustment to the correct pH level. With regular mulching and slashing and raking in the orchard, weedicides are not necessary. Bill believes more research into natural fungicides, and biological and natural insect control should be undertaken, for us to live in harmony with the insect population.

Researchers could perform trials with crops grown under the organic system and the petrochemical system, right through to a final nutritional analysis of the mature produce. More information is needed into sources of natural chemicals and soil supplements.

After a wonderful afternoon wandering over the farm, I reluctantly bade the McDonalds goodbye, content and happy. I felt honoured to share their achievement, their hopes for the future, and their wonderful old-fashioned country hospitality.

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Thoughts on building your own cottage

"There is some of the same fitness in a person building their own house that there is in a bird building its own nest. Who knows but if people construct their dwellings with their own hands, and provided food for themselves and families simply and honestly enough, the poetic faculty would be universally developed as birds universally sing when they are so engaged? But alas! We do like cow-birds and cuckoos, which lay their eggs in nests which other birds have built, and cheer no traveller with their chattering and unmusical notes.

Shall we forever resign the pleasure of construction to the carpenter? What does architecture amount to in the experience of the mass of humanity?

I never in all my walks came across people engaged in so simple and natural an occupation as building their house."

by Graham Roberts

Gungal, New South Wales.

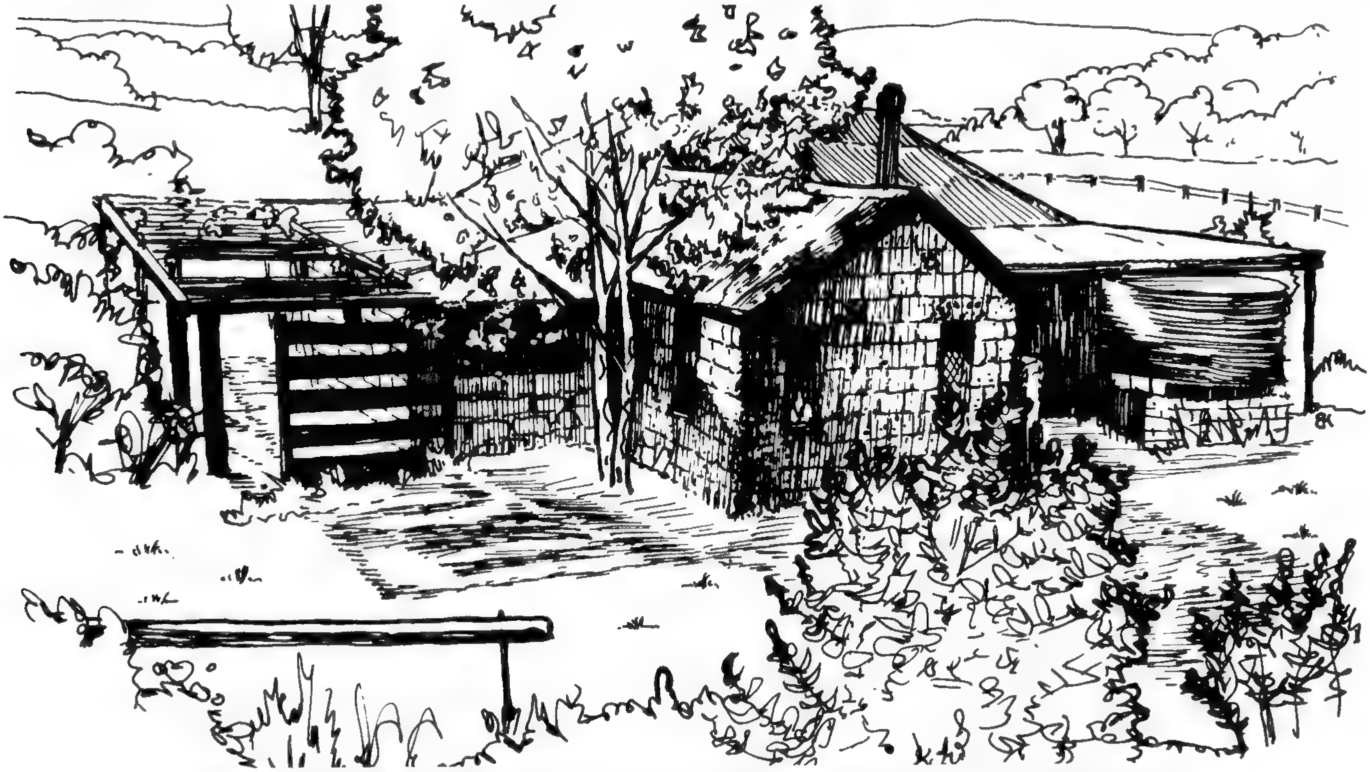
THESE words were written by Henry David Thoreau, an American essayist, who published the classic book 'Life in the Wood', a record of two years experience as a recluse on the shores of Waldon pond. I think they say it all.

Mechanical precision is neither expected nor desired in the building of stone cottages. The knife-like sharpness to the corners that was the work of poor unfortunate convicts in this country 150 years ago, in my opinion, takes away the softness that is essential with a natural material that is severe enough in itself. I find that care in the laying of stone walls should take the form of rugged honesty rather than forced exactness in the finished surface, and that certain ruggedness that makes stone walls beautiful is never to be found in a wall in which tricks have been used to speed its construction, display certain surfaces, or economise on the stone.

Mortar is better if it is mixed with a sand that is somewhat similar in colour to the stone being used. To finish joints I generally gently brush the surface before the mortar sets.

The mortar need only be strong enough so that the part that is exposed to the weather will not crumble away too readily — even if it does, the joints are easily filled again after the first hundred years or so. There are many very old stone walls to be found, still standing with the joints just made of mud or lime mortar.

I like to quarry stone and expose a sandstone appearance, the only excuse there can be for the use of 'showy' stone is that it is local to the site, and yet at great



Graham Roberts' beautiful hand-made stone cottage at Gungal in New South Wales.

expense such material is hauled considerable distances at times to construct a cottage. This is on a par with building a log cabin where there is no sign of a forest. The most artistic cottages are those that look like part of the landscape and provide most interesting possibilities for country living.

Timber should come from a local mill, where possible, or a nearby wood lot. For roof beams or major supports I encourage an adzed or sawn finish. Stone, weatherboard and shingles are an everpleasing combination but good old corrugated iron is a very serviceable roof for Australian conditions. If you are going to catch water from the roof for household use be careful about any paint or stains used on the surface because this could contaminate the water supply.

A surprised subject captured in the picturesque kitchen: Rayburn stove, stone walls and leadlight windows.

A word about chimneys — everyone knows the many warnings and maxims about building fireplaces. Those who have lived with a smoky fireplace are particularly disposed to listen. I live with a fireplace in which the chimney is of marginally authentic design but is the only one I have ever built that does not smoke. It draws with unfailing willingness and throws out most liberal and comforting warmth. This is helped by an old plough disc that stands against the back of the firebox and helps to radiate heat into the room.

The tale has been told over and over again of the chimney that has been faultlessly made yet smokes in spite of all the succeeding remedies, both internal and external, that have been added. It seems now that the lay of the land and the prevailing wind, two rather merciless considerations, have much to do with smoking chimneys.

I have built many fireplaces in many different areas and conditions over the past 30 odd years and never have I been sure that they will not smoke until I've tried them. However, for a chimney to draw correctly it must be thoroughly dry and this could take some time after its construction. Even so, I must confess to about a 25 percent failure rate.

In some parts of Australia there are houses of stone and mud that have withstood the test of time for almost 150 years. The timidity which deters some people from economical measures, such as using mud mortar when sand and cement are unprocurable, is strange and means that people often go homeless when with thought and labour they could very well own a picturesque cottage.

Walls of stone or mud, rafters out of saplings and cladded with iron or shingles split from the forest. Even thatch made from rushes will provide shelter. Stones with one flat surface or old bricks can be used for flooring with a membrane of plastic under to keep out dampness.

I use stones for garden paths and paving laying on sand and cementing between. There are plenty of beautiful old doors to be found if you start looking, just as there are glazed casement windows and other materials needed to build a cottage in secondhand yards.

These simple dwellings can be made most comfortable and artistic and the envy of any who live in more expensive houses where people freeze in winter and boil in summer. It is some satisfaction to have a house that has grown from its surroundings for approximately one third of the cost.

Here at Swallowfields we are currently building our second stone and timber house and we have had many students willing to work and learn our methods. We held a very happy field day here ten weeks ago and we met quite a few more EG readers interested enough to contact us, and stay over the weekend (see Earth People Write, EG 57).

In the late summer of next year we plan to hold a weekend seminar to demonstrate alternative building methods, alternative energy sources, and organic and non tillage cultivation with an accent on biodynamics. So if anyone is interested please write to us for details, and I will be happy to forward them ('Swallowfields', Gungal, NSW, 2333).

Battling in the bush

Part III, continued from Earth Garden 56.

There were enthusiastic reactions from Earth Gardeners to the two stories by John Wolfe in EGs 55 and 56, Battling In The Bush, parts I and II. We are pleased to say that we have managed to drag two more instalments of John's delightful writings from him.

by John Wolfe

Mallacoota, Victoria.

THE BULLDOG ants that lived under the tankstand at Porridge Hill (see EG 55 & EG 56) decided to move elsewhere. A little procession passed the door of my shack, carrying food and eggs to a higher site on the ridge. The tail-enders were old ants that didn't want to go. These old retainers were overpowered and dragged to the new nest.

I scratched my head. "Maybe it's going to be a wet season," I muttered, as the last of the old timer ants were forced down the new hole.

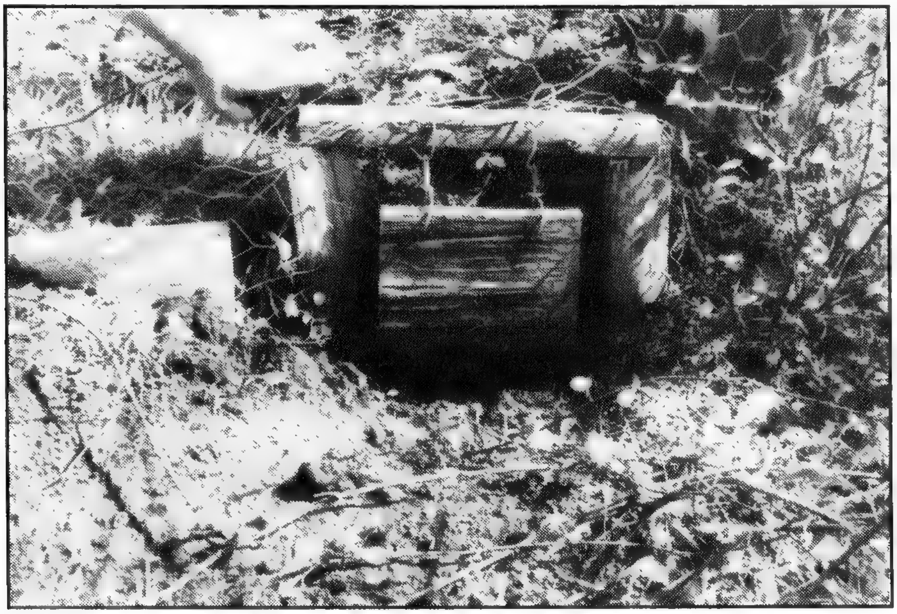
Then the skies opened. It seemed as if I was living under a waterfall. The rain tumbled down until the whole country was awash. Porridge Hill lived up to its name, and the tractor and truck sank deep into the slush. The rain continued for weeks, and my potato crop rotted in the ground.

I took a lesson from the ants. When opportunity came, I moved camp, five miles further into the hills.

What a change. In the upper valley of Traralgon Creek there was luxuriant green grass, and tree ferns grew in the gullies. The land was mostly steep, but there were small silt flats on the bends of the creek, where vegetables could grow.

The land had been cleared many years before but had reverted to weeds and scrub. A tropical tangle of blackberries ten feet high choked the creek flats, but promised rich soil underneath. A blaze of yellow flowers on the steep slopes above told me that the poisonous weed ragwort was well established. Erosion gullies scarred the eastern side of a ridge called 'Ballyhooly', and water could be heard gurgling through tunnels deep under the ground. At one place it seemed as if the whole hillside might slip away.

A school teacher friend, Doug McKay, told me he knew how to control erosion, using rolls of wire, and came out to view the problem. "We'll soon fix things up with a bit of Cyclone wire," he encouraged me, as we puffed our way up the steep slope. Doug looked around at the scarred landscape, infested with ragwort and rabbits. Then he put his ear to one of the tunnels, and heard the strange noises coming from deep below. "Good Grief!" he said, "You'll need the whole Cyclone works!"



Wombat gate mark I (later we used old motor tyres).

I decided to fence in the eroded area to keep sheep out, and plant it with pine trees. (Wattles and eucalypts would have been better.) My cheerful teacher friend helped me drag posts and wire half a mile from the valley below, and we struggled around on the slippery hillside. It was an awkward task. The fence crossed numerous erosion gullies, and sheep had to be prevented from walking along the channels beneath the wire. We drove stakes into the mud beneath the fence to keep the sheep back.

When the job was done, we sank exhausted on the slope. "The sheep will never get through that," said Doug, who always looked on the bright

Building a bush cabin at Koornalla in the Traralgon Creek hill country.

side. I studied our rows of flimsy stakes doubtfully. "I'll tell you why," he went on, "you might say the stakes are against them!"

By this time I was married and the patter of little feet warned me that I had to increase my earnings. I grew potatoes on the creek flats, and established a plant nursery close to the main road. On the hills I ran sheep, or rather they ran me. There was a lot of running. Thanks to holes in the fences made by wombats, the sheep were often out. When they escaped, they had thousands of acres of rugged mountain ranges to hide in, so I got plenty of exercise.

Wombats were the main residents of this wild land. The stubborn animals burrowed through or under any obstacle which lay in their path. A new netting fence would have holes made in it the first night. The sheep learned to walk the boundaries, looking for escape routes. An old farmer told me: "You've got Buckley's chance of keeping wombats back. You've got to learn to live with them." He showed me how to staple a heavy sapling or log to the bottom of the fence so that wombats could force their way underneath, but sheep were kept back.

Then I hit on the idea of making 'gates' for the wombats. I did this by setting old motor tyres in the fence, fitted with a swinging wooden block (see EG 25, page 170).

There was a place we called Wombat City, where the animals had thrown up a whole hillside into embankments, and honeycombed the ground with burrows. One night we heard strange noises coming from the hill, and my son David and I went to investigate.

It sounded as if a pack of dogs were on the rampage. Something large and fierce came rushing towards us in the dark, roaring and growling. We leapt for cover behind a tree. A second animal came crashing through the scrub from another direction, making threatening noises, and started to snort around in the leaves close to where we were standing. Creature number two suddenly made a flying attack on creature number one. More fighting was going on further up the hill. Every few seconds they would give a bellow of rage, and charge off in a new direction.

"It's wombats," whispered David. "Do they bite?"

"Let's get out of here," I said. We withdrew quietly, the way we had come, as the War of the Wombats went on around us.

There used to be a bounty of ten shillings each paid on wombat scalps, because of the damage they did to fences. At the head of Traralgon Creek on steep abandoned farmland, a man known as Wombat Pattinson relentlessly hunted the wombats. He came to town once a year with his grisly trophies to buy supplies. Wombat Pattinson travelled on a horse-pulled sledge for part of the way, for no road reached his property. There was little point in the trapping, for all the farms in his area had been abandoned. For many years the

"The sheep were often out."

slaughter went on, till old Wombat retired and went to live at Traralgon. He sold his wild hill land to Australian Paper Manufacturers for re-afforestation and wood pulp production.

The town life did not suit the lonely old man, and he went back to the mountains. On the very day that the transfer of his land to APM went through, Wombat died at his old haunts up at Balook. Wombat Pattinson has gone, but the wombats still live at Balook, safe in their underground burrows.

The Lively Hillfarmers

The farmers on the Traralgon Creek above Koornalla were lively folk. Because of the steep terrain, most work had to be done by hand. Some lucky people had enough flat land for a small hay paddock. Cattle sometimes slipped off the precipitous slopes and fell to their death on the rocks below. Tractors could not be used in such country. Only battlers with a lot of spirit settled in the gulches of Le Roy. There was no electricity. A mailcar ventured up the narrow valley on weekdays, and a truck collected cream cans from the farms. Dances were sometimes held in the Le Roy hall, near the junction of the east and west branches of Traralgon Creek.

There were many 'hard cases' in those rugged green hills. A Traralgon radio technician went to Le Roy to repair a wireless set that had gone on the blink. As he fiddled with the interior of the set, the hillfarmer stamped about impatiently. "It works sometimes," he said. "Put the boot into the bastard!" With that, he gave the offending set a violent kick with his hobnail boot, and crackling music was heard.

The chap who held the mail contract for Le Roy drove an unregistered car. They caught him in the end, and he was fined for not having a driving licence. Another man, Jim Levy, reached his farm by means of a primitive bridge, made from fencing wire. On this flimsy contraption, balancing like Blondin, he struggled over the racing creek.

Thickets of ragwort became established in the inaccessible mountain gullies. With every breeze, thousands of seeds from the poisonous plants drifted like thistledown over the cleared land. The farmers fought a losing battle with ragwort, and the slopes of Le Roy were a dazzle of yellow in summer. But life continued, for them and for us.

Cumbungi chair seating

by Jan South

St Arnaud, Victoria.

OVER the years I have haunted secondhand shops and clearing sales in my quest for old chairs. My favourites are the ones that needed their seats recaned and my aim has been to get six chairs of the same design for a dining setting. I had three of one type, two of another design, as well as quite a few singles. While waiting to complete the setting the chairs dangled from the only bit of covered storage space that I could find — the rafters of the shearing shed.

The shearers made their annual visit to our shed, and during 'smoko' they would lie on their backs and look up and count the chairs, and make snide remarks that the boss would be making shed extensions soon. (In later years estimating their value was the favourite game.) It was at this point that husband made some very nasty threats and chair collecting tapered right off.

One of the 'singles' was not suitable for re-caning, so I needed another crafty idea. After searching through the available craft books I found an article on sea grass seating. It seemed simple enough. But our town does not have a shop that sells that sort of thing. Accustomed to life down on the farm where wire and hayband perform miracles when there is nothing else, I did seriously consider using hayband as a replacement for the sea grass. Then we discovered cumbungi growing in the dam.

Cumbungi grows on dams, swamps and in irrigation channels. It grows from 4 to 8 feet tall depending on the growing conditions. When I first used the cumbungi I cut it in December while the cumbungi flowers were still immature. I wore long rubber boots and I slashed the leaves at ground level with a carving knife. I took the leaves home in bundles, and dried them, away from the hot sun, on the shearing shed floor (shearing is over till next August).

I had a stroke of luck — because the flowers on the reeds were so immature, they dried to perfection, and I had lovely reeds for winter arrangements.

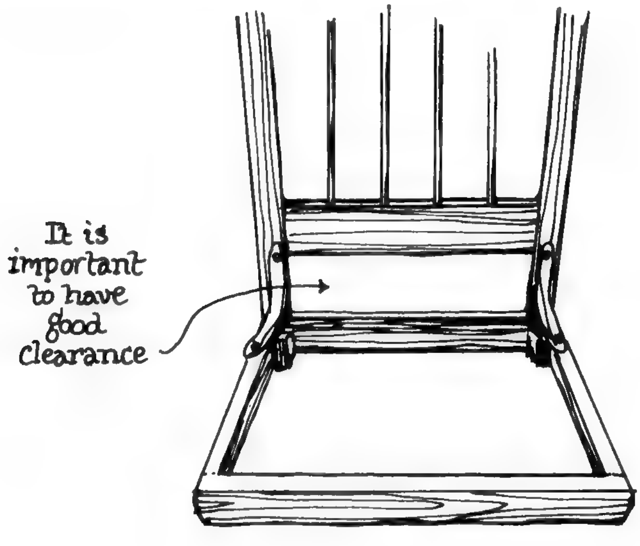
I repaired, stripped, stained and polished my chairs before I redid the seating. The actual seat only took one afternoon. I soaked the leaves in the bath, then wiped them down, and left them lying on the bathroom floor under a damp towel until I needed them. It is important not to let them dry out.

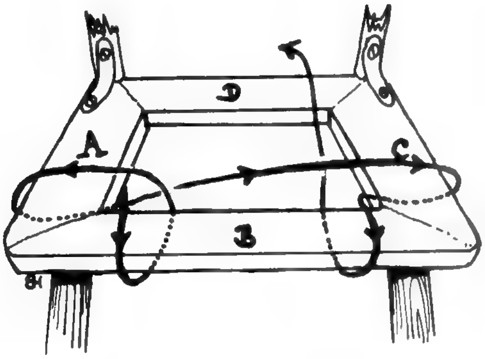
Cumbungi cord is made by twisting three strands smoothly, so that it looks like firm cord, adding leaves as necessary, and trying to keep the thickness of the cord as even a possible.

Tie a knot in the cord and tack it under side rail A, then take the cord under front rail B, and over rail A. Continue under A, over and under C, over and under B, over to D, and continue this way building up the corners, keeping the work firm and the rows close together. My seat was slightly wider at the front than at the back, so I had to build up the front corner before continuing. It sounds complicated, but it isn't really.

I padded the seat with the leftover leaves. A few days later, when the seat was perfectly dry I sprayed it lightly with clear varnish and there it was: better than new.

From the shearing shed rafters to the dining room, in one crafty swoop. If the cumbungi is cut at this time of year, while the flowers are still immature, they can be used as room decorations as well. The leaves must not be allowed to dry out completely before use.





Cob revisited — saving on labour with earth building

by Bob Rich

Moora-Moora Co-operative, via Healesville, Victoria.

BUILDING with earth is an art like cooking, not a science. There are so many ways of doing it. Back in 1981 I described a method which is among the least labour intensive. This is a variant of an old technique called cob walling (see EG 32).

There are ancient cob cottages in some parts of England. They have stood up to weather and human use for centuries. The chalky clay soil was soaked, mixed with straw and laid directly on the walls in an 8 inch (200 mm) high layer. The builders allowed the layer of mud to dry a little, then beat it with wooden paddles to compact it and eliminate cracking. The next layer was put on top after a suitable drying period: one to six weeks depending on the weather.

Walls were shaved smooth and vertical after they reached the required height. This was a skilled job, using an 'iron' which was like a spade set at an angle to its handle.

This old traditional technique is slow, skilled and labour intensive. But the term 'cob walling' which derives from it has been applied to all variations which involve the construction of an earth wall by placing mud directly in position (instead of casting it in blocks, then laying these up later).

The method I described in EG 32 used light formwork. This is set up, the mud is poured in and allowed to dry. Regular dividers can be inserted to concentrate shrinkage cracks in places which would correspond to mortar joints between bricks. The resulting wall is stronger than a mudbrick wall (because each layer melts the one below it, instead of containing a relatively weak layer of mortar).

If the soil is light, and releases water fairly readily, it is possible to make the mixture very sloppy and pour it in by bucket. This makes mixing easy, and reduces labour content to a quarter or less of that involved in building a mudbrick wall. With heavier clay soil it is necessary to make a relatively dry mix — just enough water to make the mud workable — otherwise the stuff would never dry. Straw is needed to distribute shrinkage stresses.

So, the labour of mixing mud is the same as for making bricks from the same mud. However, mudbrick making involves shovelling the mixed mud into moulds to actually cast bricks, turning the bricks one to three times, perhaps storing them away and getting them out again — then mortar has to be mixed, and the bricks laid to create a wall.

Compare this with the work of setting up some formwork, then shovelling or bucketing the mud directly onto the wall.

The layer of mud on the wall will take less time to dry than mudbricks made under the same conditions. One day a young man visited me who was only interested in laying mudbricks. He used up my complete store of dry bricks in one day, while I made a new batch. The following day I made some more mudbricks, but soon ran out of space. So, in desperation, I fixed floorboards in place as formwork, and poured in some mud. This was my first experiment with formwork cob (I didn't even know the name, and thought I had invented something new).

Well, the bricks I made that day took three weeks to dry to the point of being usable. By that time, I had three layers of cob on top of each other. There are two reasons for this greater drying speed. First, the wall below the new layer soaks up some of the excess moisture, and this gives a much larger surface for evaporating water.

Second, the cob layer only needs to dry to the point of being able to accept the weight of a new layer on top. A mudbrick has to be so dry that it won't be damaged by being picked up and moved around. This is a much more demanding requirement, so implies a longer drying period.

Quick lift-on formwork

A few years ago I was building a small workshop, and decided to use formwork cob. Instead of setting up a board on each side of the wall for each layer, I constructed the device shown in the drawing. The actual formwork is made from offcuts of 9 mm thick 5-ply (from a car case recycler). Battens made from lengths of old hardwood paling timber were nailed on at 500 mm intervals. Any springy timber would have done the job. There was a thin horizontal spacer joining the forms at each pair of palings (these were 'width spacers'). They were the same length as the thickness of the wall. Immediately above each width spacer was a 'spring': a double length of flexible wire, twisted tight with a 100 mm nail.

This formwork was tall enough for a 200 mm layer of mud, and a 40 mm overlap with the top of the previous course. When setting up, I would start by standing a 200 mm long piece of wood at each end of the form, and resting the width spacers at the two ends onto these 'height spacers'. Then I forced a wedge shaped piece of wood, just a bit longer than the thickness of the wall, between each pair of battens. Its vertical position was checked with a spirit level, and adjusted by loosening wedges, shoving the top of the forms in the right direction, then retightening the wedges. The height spacers could be removed once everything was just right. I timed myself a few times. Formwork for a 4 metre long wall took an average of 3 minutes to lift to the next level and set up.

Sand-cement cob

It was December 1982. There were predictions of a particularly bad bushfire season ahead. I was trying to finish the walls of a mudbrick house and get the house enclosed before the fires might arrive. Then the clay soil ran out. There was a plentiful supply of sandy loam soil nearby, so I quickly switched to this raw material.

Naturally, I wanted to maintain the house's mudbrick appearance, so I made 'mudless' bricks by casting blocks using a mudbrick technique with a ten percent sand-cement mix. These bricks were great, looked like mudbricks, but were somewhat lighter in weight. They could be picked up and carried out of the way after drying overnight, and were ready to lay after three or four days. This allowed me to speed up a great deal, but I wanted to be faster still. The fires were coming!

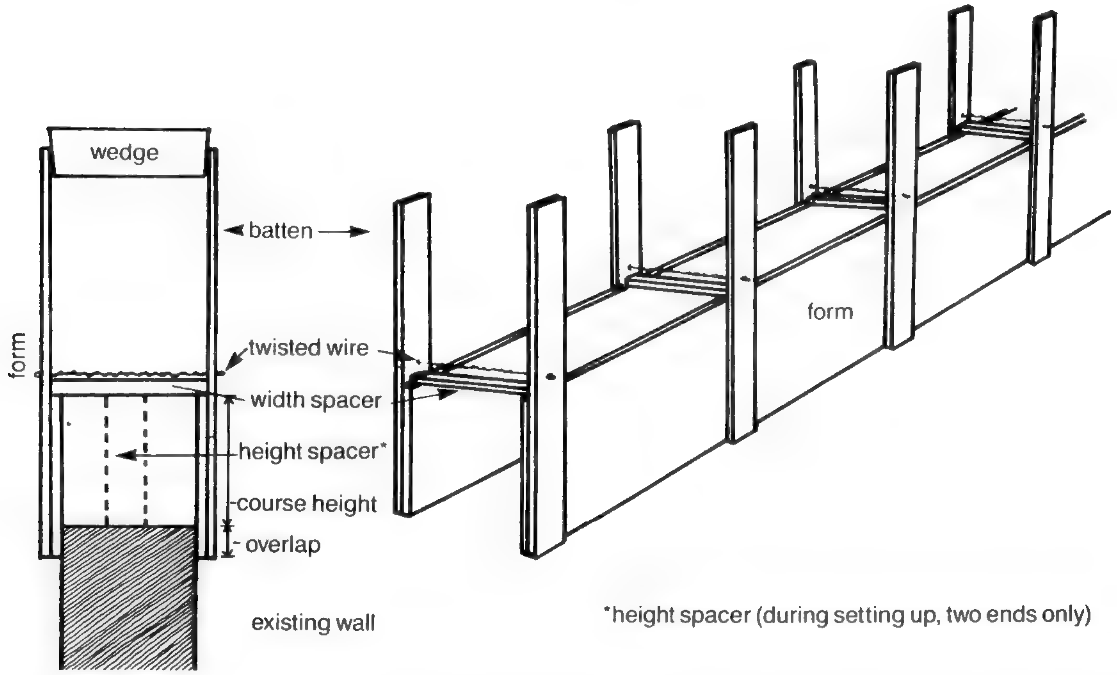
So, I used these 'mudless bricks' to lay the corners of the house, and did the straight runs in formwork cob, using the same sand-cement mix. It was possible to put up a new layer per day. So, the 21 layer high wall was completed in about three weeks: about the time it would have taken for the first batch of bricks to dry if they had been made of clay.

There was a little bit of extra work involved in making the straight, flat runs of formwork cob look like mudbricks. After the sand-cement mix was slopped in, I used a trowel to 'cut' the mud at regular intervals so as to imitate a brick pattern. Immediately after raising the formwork, while the last course was still relatively soft, I used a large screwdriver to rake out these thin vertical cracks as well as the horizontal join at the bottom of the layer. After rendering the wall looked indistinguishable from the mud brick surface of the rest of the house.

There is a local team of builders who recently applied the same idea, but in a more ambitious manner. They made quite large panels of formwork, about the size usually used for rammed earth. Their forms were of various lengths, and 600 mm high. The 12 mm chipboard (lacquered on the inside) was stiffened with a timber framework on the back. Two forms like this were held together with bolts or clamps to box up a section of wall. (I don't like chipboard — I would have used two layers of secondhand plywood from a car case recycler.)

The soil used by these builders was mostly sand, but with lumps of clay. They found it necessary to sift the soil to homogenise it. Then they put in three shovels of cement to 20 shovels of soil — more than I did — and mixed up a mortar in a cement mixer. The mortar was bucketed in place. The forms were left on overnight. The wall surface was trowelled inside and scrubbed with a broom outside while it was fresh.

This has to be the fastest way of building an earth wall. I don't much like the smooth, flat appearance, but it



*height spacer (during setting up, two ends only)

'Quick' lift-on cob formwork. Forms may be materials such as floorboard or thick ply. Battens can be palings (must be springy wood). Wire twisted up with 4 inch (100 mm) nails, acts as a spring. Height spacers are stood on top of the previous course and formwork is rested on them and wedges forced in while verticality is checked. Height spacers are then removed.

Susanna's cottage: built from sand-cement cob, using large forms.

appeals to people with a liking for neatness. The half-strength concrete is light and porous enough to offer significant thermal insulation (like any other earth wall), and is completely weatherproof. It can be rendered inside for appearance's sake, but needs no extra weather protection.

Hidden bottles

I am currently building a studio for a friend. There was an awkward spot to fill under a window. It was convenient to use formwork cob, although the rest of the walls are rammed earth. So, I put up a couple of boards as formwork, mixed a mortar from the sandy soil and 10 percent cement, and filled the space as usual. The mix wasn't quite enough, so I shoved some empty glass bottles into it. I made sure that the bottles had at least 25 mm of mortar cover all around. There was no cracking, or sign of any other problem on the following day, or since.

So, I continued to entomb bottles in the subsequent layers. Result: reduction of the garbage cluttering our planet, less work and materials were needed to do the job, and probably the completed wall has better heat insulation.

No doubt the wall is weaker than it would be without bottles, but it seems plenty strong enough. I have given it sharp thumps with a length of timber and with a hammer, and it doesn't seem to mind. I wouldn't do this kind of cheating with a load bearing earth wall, but can see no harm in it when there is a load bearing structure and the earth walls only fill the space between.

Loadbearing?

Of course cob walling is suitable for load bearing purposes (tying down a roof, supporting a floor). After all, mudbrick is, and cob is stronger than mudbrick. Corners are a problem with formwork. Either special corner forms are needed (they are a nuisance to set up), or corners can be set up with mudbricks or pressed blocks, and the straight forms clamped onto these. My original cob article (EG 32) describes how to do this.

Heavy clay?

A number of people have asked me about using cob with a heavy clay soil. I have never tried it, and advise against it. There are three reasons:

1. Heavy clay tends to be reactive: it shrinks and cracks a lot during drying. This is enough of a problem when making mudbricks (which are short), and could be serious for cob (which is in effect a wall-length mudbrick).
2. Heavy clay holds on to water very well. I have made mudbricks from it. At one place, we were making bricks under cover, yet they took six weeks to dry! So, you could come to a standstill because none of your walls are dry enough form a new layer.
3. Heavy clay is compressible under load when it is damp. A new layer of cob weighs a lot, much more than the same volume of dry mudbricks. At the same time, it wets the wall below it. The result could be a collapse as the higher layers are being placed. All in all, however, cob is a versatile and easy method. Its use can cut building time and effort to a small proportion of that needed for mudbricks or even rammed earth.

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Season by Season

by Jackie French

THIS IS the time of year when even the most soulless urban troglodyte dreams of growing something. The sap rises in plant and gardener, fruit swells from the blossom and avid growers get a manic gleam in their eye and tromp out at night to tread on the snails. This is also the main planning time. What you plant in the next two months will determine what you'll be eating next winter and spring.

There are two sorts of long term crops you should be thinking about. The first category are those you plant enough of to see you through the year — carrots, beetroot, parsnips, leeks, parsley, silver beet, celery, turnips and swedes can all be planted in spring and eaten throughout the year. Except in very cool areas they can still be planted now if you coax them along.

Make sure you have enough in by now to see you through the next eight months or so. Calculate how many you eat a week and multiply. Grow too many rather than too few — spring and winter surpluses are a thing to boast about. Unlike summer gluts of zuchinis you can always give away an armful of winter silver beet or a bunch of fat carrots, dark orange from the frost.

Other crops need to be timed carefully for winter and spring eating. Plant them too early and they'll be past their most prolific stage by winter. Plant them too late and they'll just sit there till spring then dash to seed before you get more than a taste.

Crops that need planning include brassicas — broccoli, caulies, cabbage, brussel sprouts as well as onions, broad beans, peas, radish and winter lettuce. This is the time for planning brassicas.

There is no easy way of telling when you should plant your winter crops. It will depend on the weather and the time it takes each crop to mature. You will have to go by past experience — yours and your neighbours'. For example paleface caulies take five months to mature — supposedly. I've had one take 18 months and others ready in three. Cool weather means slower maturing, and a hot spell after cool weather can mean fantastic growth spurts so that lost time is more than made up.

One autumn I planted caulies with five and three month maturing times respectively. Both matured at the same time in the spring flush. Try planting paleface caulies from December onwards. These are old reliables. That way you should get staggered cropping from autumn through to late spring, even if the first few have got yellow or purple tops from too much sun. Make sure brussel sprouts have at least three frost free months to mature — if you plant them too early they'll be puffy and tasteless from the heat. Broccoli needs about the same time. If you plant to early the main stem will be small and stringy and the offshoots go to seed faster than you can eat them.

It is better to plant too early than too late. Crops that grow too fast can always be slowed down by *very* heavy mulch, applied after a cool spell or in the early morning. It may sound crazy — but try emptying ice cubes under the mulch to cool down the soil.

It is no use watering less frequently hoping you'll slow down their growth. They'll mature just as quickly except they'll be smaller and tougher.

Quick crops

There is still a chance for fresh food for Christmas even if you haven't planted by the end of November. Try the following:

cutcelery — a celery used like parsley, very strongly flavoured. Seed can be sown all year round throughout Australia.

borage — usually just grown as a herb, but the cucumber-tasting leaves are delicious cooked like spinach or dipped in egg and breadcrumbs and fried. Sow from August to March or all year in hot areas. Very fast growing.

Rocket, rucca or eruca sativa can be sown all year round — it self sows with vigour. Eat the young leaves in salads — the older leaves are slightly bitter and smoky, loved by some but not me — try steaming it.

purslane — an annual sown in spring in cool conditions, all year round in tropical to subtropical. Cook it or eat it raw. Cut the leaves at about 10 cm high or less — soft and tender.

radishes — there are a multitude on the market: red, red and white, long white, black, small and round or long and tapering. They will start to mature in six weeks. Steam the tops too.

watercress — you can be eating this in a month, but be wary of tiny snails which carry liver fluke — wash even home-grown watercress in three changes of water.

baby carrots — these should be ready for first pulling in six weeks from the seedlings emerging. Plant them as thickly as you like. As long as you harvest them regularly the others will gradually thicken as you make space for them.

silver beet — you should have your first picking in a month if you feed and water them well.

Chinese cabbage — don't try this in subtropical areas — it'll bolt to seed unless you grow it in a cool shaded place. In cooler areas you may pick it two months from planting.

Using waste bits

Parts of other vegetables can be 'harvested' even if they aren't really mature. Try **parsnip tops**. Use them like celery in stews and soup or finely grated in salads. **Beetroot tops** can substitute for silver beet, as can **turnip tops**. If these are young and tender they are also excellent raw. Try young turnip tops grated up in mashed potatoes. Try eating **garlic tops** instead of the bulbs, again, raw or cooked. The leafy **tips of broad beans, broccoli or brussel sprout leaves, young sweet corn** teased out from next to the stalk or **zuchini or pumpkin flowers** all make for good eating.

Pumpkin flowers are wonderful — stuff them with leftover fried rice and stew them in stock, or dip them stuffed or empty in egg, then breadcrumb and deep fry them. Serve them with lemon juice or hollandaise sauce.

You can tell which are the male flowers (most of which are expendable) and which are the female, by looking for the swelling at the base of the flower.

Try very **young cucumbers** too — pick them no longer than your little finger or even less, slice them thinly so they are almost transparent and quickly stir fry them. A Chinese friend introduced me to them and they have become my favourite vegetable.

Lettuce

Lettuce sown now may be ready for Christmas in warm areas — try mignonette or butterhead lettuce, small, sweet with soft rather than crisp leaves. Cos lettuce can also be sown now — just pull off the leaves as you want them or wait till it hearts. These lettuce should take ten to twelve weeks to mature now — fourteen weeks in colder weather.

In hot areas sow only bolt resistant lettuce — Narromar, red mignonette and good old Greatlakes, the common lettuce that goes crisp in the fridge. I grow red mignonette all year round, letting them go to seed and sprout at will. They tolerate both frost and heat waves.

Lettuce transplanted in hot weather may seem to take, but then go prematurely to seed. Only transplant on cool days when it's overcast or in the evening, and keep plants sheltered for a few days and well watered. If the lettuce are large, cut off two thirds of the leaves to minimise transpiration and make sure the roots point straight down. Lettuce are often transplanted into holes too small for them.

Never sow lettuce when the temperature is over 28 °C — the seed may go dormant. You can overcome this by putting the seed in the fridge, slightly moistened, for a couple of days before you sow.

Bitter lettuce are common in summer. This is caused by a setback to their growth — usually moisture stress, but sometimes lack of fertiliser. Keep lettuce growing strongly if you want them to be sweet. Water them every day, mulch them to even out fluctuations in soil temperature, control weeds and keep the soil fertile and humus rich.

Too much water can make some types of lettuce **puffy** instead of firm hearted. Try using drippers instead of a sprinkler, or sticking the hose under the mulch. Or shade them — I like to grow summer lettuces under the corn or in the shade of the beans so they are sheltered from harsh afternoon sun but get morning sun to help dry them out and prevent slimy interiors.

If your lettuces **fail to heart** it's probably because they've had too much nitrogen and water, especially during hot weather. Stick to organic fertilisers — steadily releasing nutrients from organic matter, or manures, blood and bone or, if necessary, one of the liquid manures detailed below.

If you are bothered by **slimy lettuce** try mulching heavily and watering less — especially overhead watering — and make sure your lettuce aren't grown in the same spot year after year. Allow at least two other crops to grow before you replant with lettuce to keep down fungal and bacterial conditions. Don't plant lettuce near dandelions, chicory or endive — they have the same range of pests and diseases.

Fast feeding

If you are in doubt about the fertility of your soil boost your lettuce with **liquid manure** every week. This is easy to make and is a good tonic for any gross feeder like celery or silver beet — or any crop like broccoli you are continually harvesting so must continuously feed.

Fill a bucket with any green garden waste. Weeds are fine, comfrey is fantastic, as are seaweed and nettles and any manure, fresh or not, is good too. Fill the bucket with water, stick a lid on to repel mosquitoes and leave it for three weeks. Now take off the liquid as you want it, diluted to weak tea colour and pour it over your plants. The sludge is also a good mulch — use it every two months or so to make sure weed seeds, if any, are dead.

Any fruit or vegetables you suspect are infected with fruit fly can also be 'drowned' then later used as mulch. This is a better method of disposal than composting, which can perpetuate the cycle if the heap isn't hot.

Quick two week compost

Compost needs moisture, air and nitrogen to decompose quickly. The finer your material is shredded the sooner it will turn into compost — as long as you keep turning it so it doesn't compact. Gather up any garden waste or scraps. Shred them with shears, under the garden mower or with a chaff cutter, as finely as you can. Toss them into a metre high heap. Moisten the heap with liquid manure as above, or sprinkle it with blood and bone and water it in.

Toss the heap every two days. Keep it moist with liquid manure or blood and bone dissolved in water until it reaches a weak tea colour. This should be ready in two weeks in hot weather. In cooler conditions cover with weighted-down black plastic in between tossings if you want to make the fortnight deadline.

Melons in grass

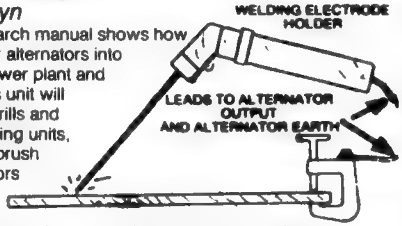
Melons take from 100 to 150 days to mature, depending on the variety and local climate. If you are growing these in a marginal area try growing them on the lawn. Take a forkful of compost or good soil, heap it in the middle of mown grass and plant seeds or seedlings on top. Surround the mound with black plastic or alfoil. Don't try this in hot areas — you'll burn the vine. Give liquid manure every week.

Most animals ignore melons once they're too big to be easily trodden on. Keep the grass grazed with anything from sheep to wallabies to guinea pigs, or mow it yourself. Even without alfoil or black plastic these grass grown melons will be less frost prone — the short grass acts as a natural insulator. But they must be fed extra well and watered to compensate for grass competition.

This method also saves space in the vegetable garden, and removes mildew prone foliage from the humid confines of taller plants. I've tried it with pumpkins as well

HOW TO BUILD A PORTABLE HIGH VOLTAGE POWER PLANT AND WELDING UNIT USING A SECONDHAND CAR OR TRUCK ALTERNATOR

Research and Design
by Jim Allowyn



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as melons, and have found it speeds up maturity by two weeks here in my part of the world.

Successions

Even if your vegetables haven't cropped yet don't forget to keep planting to get continuous crops. A new lot of beans should be planted as soon as the last lot starts flowering. Corn should be planted every two weeks. I usually stick in another lot of cucumbers and zuchini in December in case early plantings are hit by powdery mildew. Plant them well away from the first lot, with a tall crop like corn in between if you can.

Tomato cuttings

Take tomato cuttings now. These are an easy way of getting successive crops, and cuttings will fruit much earlier than seedlings. In frost free areas if you take a cutting from your tomatoes every time the bush is large enough you should keep yourself in year round tomatoes.

To take the cuttings take a sharp knife and cut off a lateral about four to six inches long. Remove the leaves from the lower half. Now take a pot filled with compost or find a part of the garden where tomatoes haven't grown for two years. Make a finger-sized hole, fill it with clean sand and bury your cutting about two thirds deep. Keep it moist and it should start to grow in a week or two.

An easier way to take tomato cuttings is to mulch your tomatoes just above the level of the first branches. When these have rooted into the mulch slice them off and plant them carefully, keeping the branch as level as it was in the mulch and gradually train it upwards. Even if you don't get around to cutting off the lower branches the extra roots will improve the growth of your original plant.

Potted tomatoes

If you haven't planted tomatoes by December buy a cherry tomato seedling, bung it in a pot and keep it on the verandah or window sill. If you take it indoors during frosty nights you may have bite-sized tomatoes for salads throughout winter.

Grafted tomatoes are worth buying if you can get hold of them. They crop about three times as much as ungrafted ones and may last for several years in frost free areas — or if they are potted and brought indoors at night.

If you can graft your own try grafting tomatoes onto potatoes for a dual crop, or native solanums like wombat berry for more frost resistant, longer bearing bushes.

Pests and disease

By now your peaches will have **curly leaf** if they're going to get it this year. You can't cure the affected leaves but badly infected young trees could be sprayed with a 1 in 10 bordeaux mixture, which will at least save young leaves coming on and new shoots even if it burns the old foliage. If the condition isn't quite so bad try spraying with **chamomile tea** every few days for a couple of weeks. Or hope that a hot dry summer will solve the problem without intervention.

Your **apricots** should have been sprayed with bordeaux in winter to reduce brown rot in the fruit now. If brown rot appears pick off all affected fruit at once then spray every week with **garlic spray or chive tea**. Thinning the fruit will let air circulate and help reduce brown rot.

Prune apricots after you've picked the fruit — if they need it — apricots require little or no pruning. Whatever needs to be done (if the trees are two high, for example, or branches are rubbing) should be done in high summer so the wounds can heal quickly and there is less likelihood of die back as infection enters.

Pear and cherry slug may be attacking pears, cherries, hawthorns and sometimes plums, apples and quinces. The slugs are small soft larvae that leave webbed holes in the leaves, in bad cases causing complete defoliation. Hawthorn bushes are a good reservoir for infection — avoid them if you want to grow cherries. I've found that natural predators — wasps and yellow robins in particular — clean up most of my pear and cherry slug, but it took several years for this to happen.

Keep the trees growing as strongly as you can to outgrow them. Try 'suffocators' — browned flour, dry woodash, lime. Mix derris with water for a high reaching spray. DIPEL is also effective.

Red spider infect a range of fruit, vegetables and ornamentals, including roses. They seem worse in dry periods. Try overhead watering, mulch weeds below the plants, especially capeweed and clover, and use a **milk spray**. You can make this by mixing half a cup of buttermilk with 4 cups of flour and 20 litres of water. Spray every couple of days till the mites are cleared.

Celery leaf spot can be controlled with Bordeaux spray. Wipe it on with a wettex or paint brush if you don't have spraying equipment — and mulch to help prevent recurrence. Wash the celery before eating it.

Slugs and snails may be attacking soft 'forced' plants like lettuce and young seedlings. You can make a simple permanent barrier with a length of polypipe long enough to surround your garden bed. One inch to three quarter inch pipe is best. Cut it in half longways. Fill it with salt and make sure the ends are well sealed so the salt doesn't wash out and poison your garden at the first storm. This is effective but must be covered when it rains. Dry ash or lime can also be used in the pipe, as can gritty sand but the occasionally very determined snail or slug may cross them.

Snail traps work but are a nuisance to collect every morning and not all traps work for all snails. Snails are conservative feeders and like what they've been used to. You may have to try a few traps to get an irresistible one — hollowed out raw potato, half squeezed grapefruit, empty beer cans (they like the yeast and sugar). Dishes of marmite and water or beer can also trap them but some snails seem to be teetotal and all you get are drunk cats.

Household pests

Summer can mean **flea plagues**. Human fleas are one of Australia's 100 odd species of fleas. They can carry a range of diseases including bubonic plague and murine typhus. Dog fleas are a different species — *Ctenocephalides canis* instead of *pulex irritans*) but most fleas are found on a variety of hosts. If you have a flea plague vacuum hard, especially up curtains and in sofa crevices. Sprinkle lavender oil liberally. Long dishes of water will trap them.

Fly spray

You can make this yourself or get a friendly chemist to make it up for you. Mix: 10 parts eucalyptus oil, 3 parts bergamot oil, 10 parts acetic ether, 50 parts cologne and 100 parts alcohol. Mix one part of this to ten parts of water and spray with an old fashioned pump spray — still easily available at about $1.50.

Fly repellent

Use fly repellant on human skin or brush it through your animals' hair or wool. Mix 3 parts oil of cloves, 5 parts bay tree oil, 5 parts eucalyptus oil, 150 parts alcohol and 200

TASMANIAN WILDERNESS SOCIETY FESTIVAL

6 & 7 February 1988

The 1987 Tasmanian Forest Festival, held near the proposed Douglas-Apsley National Park, was an unqualified success. Over 1000 people spent the weekend enjoying their forest heritage, learning skills from photography to abseiling, and soaking in the music at concerts on both days.

The 1988 festival promises to be even better. The venue is Jackey's Marsh, near Deloraine, a forested valley nestled against the imposing walls of the Great Western Tiers.

The festival will be held on the 6th and 7th of February, 1988, and will feature workshops on the botany of the area, photography, and outdoor recreation, evening and daytime concerts by local and interstate musicians, guided walks to the valley's features, and children's activities. Catering and basic amenities will be provided, bring your own tent, sleeping bag, and eating utensils.

Tickets are $15 for the weekend, or $10 per day — children 6 to 16 half price and under 6 free, include all festival activities and a free shuttle service between Deloraine and the venue.

The National Estate forest of Jackey's Marsh made national news last summer when virtually the whole community of the valley was arrested for protesting the threatened destruction of this scenic and beautiful part of our forest heritage. Local residents are helping organise the 1988 festival, and with such community spirit as they have demonstrated, the festival is sure to be a success. For further information please contact: Peter Gear, The Wilderness Society, 130 Davey St, Hobart 7001.

See you there! — Camille & Alan.

parts water. I have found this effective enough to keep flies from open wounds on animals or from damp smelly wool.

An easier repellent is made from equal parts of peppermint oil, citronella oil or pennyroyal oil and olive oil. Full strength eucalyptus oil will repel flies, as will crushed native peppermint, or at a pinch crushed stinking roger. Use the latter with caution because people with sensitive skins may develop a rash.

Those long sticky ribbons keep flies down if you don't mind having their corpses hanging round. Mint or tansy growing around the door are supposed to keep flies out but I've never found them any use. Groves of old walnuts are fly free — a wonderful resting and birthing place for stock. A jet of cold air across a door will keep flies out if you need to keep it open. The best fly control is a swat along windows and curtains each morning — flies will be attracted there by heat and light.

Lavender oil rubbed on your skin repels mosquitoes. This works even for me — and mosquitoes zero in on me in a crowd. It is effective for about two hours for women and four hours for men. I have never found that lavender bushes grown under the windows keep mosquitoes out — though lavender foliage rubbed on your skin works. The most effective insect repellent lavender is cotton lavender, or the oil-rich Tasmanian variety if you can get it.

Best wishes for a fruitful, bird filled, rich green Christmas.

Creative accounting for cows

by Robin Jean

Braidwood, New South Wales.

IT WAS time to do our six monthly accounting. Every six months we sit down (or pace up and down), and work out what we've spent on essentials over the past six months, and how much we'll have left over. This means we can have an orgy of working out things to buy with the excess.

We also look at our essential expenditure and see how we can prune it to leave more for 'luxuries'. The pleasant thing here is to make a luxury cheaper than an essential. To do this, spending on the essential goods must be more than you gain if you took the money for the luxury item and invested it in the bank or credit union.

Fruit trees are a good example. Say you spend $10 on a fruit tree. Once it begins bearing you're sure to get a greater return than if you'd invested the $10 in the bank. So although when you look at your initial expense on fruit trees you're horrified, you must remember that you'll save much more in fruit you won't have to buy.

We applied this logic to buying our solar powered refrigerator and freezer. It was cheaper to buy the panels, batteries, fridge and freezer (although if you're a regular reader of EG you'll know we've had some problems) than to keep running a kero fridge. And since we *like* having a solar house this was a luxury that suited us.

As I was saying, *that* time had come around again. We'd been having an austerity campaign because there was a lovely 100 hectare block of land not far from here which, if we worked hard and didn't eat too much, we might just be able to afford. It was about 100 hectares with lots and lots of trees and soil that needed a little care.

We didn't end up buying that land after all, so when we did our sums it turned out that despite inflation, our essential expenditure had been only two thirds of the past two or three years'. This seemed (still does) impossible to me, but we just shrugged our shoulders and worked out what we could buy with the excess.

And so began the list. Fire fighting pump. Something we've wanted for years. A typewriter, one on which all the letters worked and you didn't need to wind the ribbon. A milking cow, or two . . .

And then it came to us. We knew the monstrous sum we spent on dairy products each year. Here was a luxury we could call an essential. We could afford to spend big money on a house cow. If we spent less (we did) we would have more income for other luxuries next time. But we didn't have enough feed near the house for a cow.

We don't have very fertile land. It's not a discarded dairy or even an old orchard. We do have old mine workings, great slabs of rock and clay and heaps of water-worn stone. Even our so-called creek flats are pitted with clay over the loam that once was. How would delicate dairy cattle fare? Not very well we thought.

A few days later while cutting grass at a neighbour's place (everyone else has it but us) I thought, "Why not get some cows and hand feed them?"

So we looked at the ads in our paper: there was actually someone local selling milking cows with calves at foot. They had three for some incredibly high price. They were really nice cows but the owners were firm on the price. We ended up with two cows at a fairly high price rather than one at a low price. We did get the price down a little, by not buying one of the hulking great calves.

Now we have two pregnant cows, a nine month old steer calf, a huge heap of oats and hay to feed them as well as the odd blade of grass in the paddock, and no money for dairy products in the bank.

It'll be fascinating to do the accounts next time.

A biodynamic field day

In this first article of a series, Sophie Masson introduces us to the living biodynamic farm of Terry and Sophie Foreman of Black Mountain in northern New South Wales. Terry and Sophie have run their biodynamic farm successfully for a number of years and have taught and encouraged many people.

by Sophie Masson

Guyra, New South Wales.

IN THE wake of the beef pesticide residue scandal, and faced with growing consumer concern, alternative methods of farming have become much more attractive to commercially oriented farmers.

A good crowd of both 'alternative' and 'commercial' farmers recently attended a series of field days held in the northern NSW region, centring around a number of biodynamic farms. Biodynamic farming originated in the philosophy of Austrian thinker Rudolf Steiner. It is a recognition, in the words of Black Mountain (near Guyra) farmer, Terry Foreman, of the essential dynamism of life itself, the rhythms of nature,

It has an organic base, coupled with almost mystical perceptions of life, the soil, and the host of organisms which make up a living soil. Biodynamic farming uses a number of specially formulated preparations which are used on soils and leaves.

In a future article, Terry will explain these preparations and what function they serve (he and his wife Sophie package them and sell small quantities).

The field days took in a number of different farming units. They included David and Helen Williams' 'Demeter' property, at Breeze near Tamworth, which supplies Sydney bakery, Demeter, with biodynamic grains. Also, Digby and Helen Foster's Ebor (near Dorrigo) property, specialising in cattle, and Terry and Sophie Foreman's 'Rosencross Farm', which runs a mixture of sheep, cattle and poultry, as well as a vegetable garden, a herb garden, and some soft fruit.

Other farms in the rich northern area supply produce to the biodynamic stores dotted in the region and around the State, including dairy farms, orchards, cereal farms and animal breeding units.

At the field days, Peter Proctor, a biodynamic

A healthy turn up at a recent biodynamic field day conducted at the Foreman property at Black Mountain near Guyra in New South Wales.

Sophie Foreman with sons Oscar and Marco.

agriculture field adviser from New Zealand, spoke of the philosophy behind the movement, and its advantages for farmers. He also talked about the specially formulated preparations, and there were several examples for sale.

The field days were a great success, according to the Foremans, who were besieged with questions and requests from all angles. Although some people seemed uncomfortable with the underlying need to form a close mystical bond with the earth, most seemed to think that results spoke for themselves. The philosophy of biodynamic farming spills over into a number of life's aspects.

"We're not in the business of arbitrarily dividing life areas," said Terry.

"Steiner ideas lend themselves to a wide variety of situations."

A shop recently opened in the northern university city of Armidale, Harvest Wholefoods, is run as a showcase and selling point for much of the district's biodynamic produce. It is run as a community activity, planned so that there is no one owner, but so that everyone — customer, farmer, seller — all share in its running and planning.

The Foreman family have been at Black Mountain for five years since coming from Sydney where both completed their studies.

Terry, who has a Bachelor of Agriculture Science from Sydney Uni, as well as a Diploma of Soil Science, worked for some time at Demeter Bakery in Sydney.

In future articles, I will delve a little more deeply into biodynamic farming, its practices and philosophies.

BUILD A GEODESIC DOME PLANTARIUM, SIT BACK, AND ENJOY THE GROWTH

by Jose Robinson

Wild Cattle Island, Queensland.

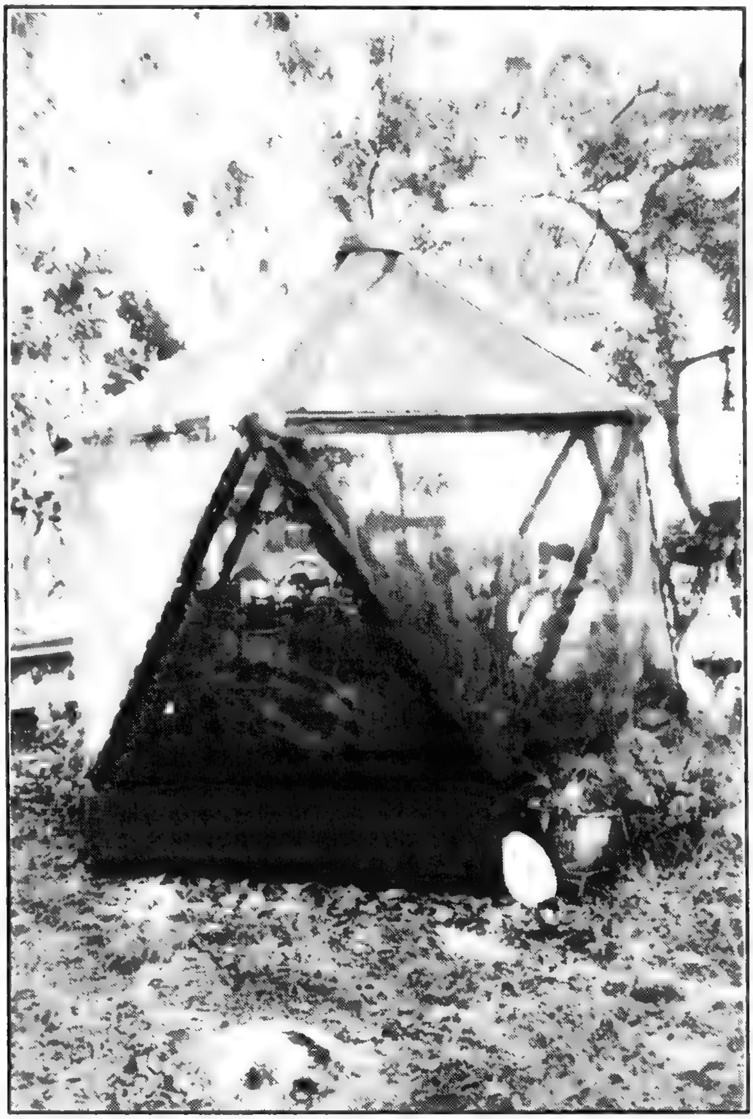
WE CONSTRUCTED our geodesic dome plantarium some five years ago. I tend to imagine the shape must have some significance to my plants living in it (like pyramid power), because uncannily enough, I rarely have any plant fatalities among its green residents.

Sometimes we have left them unattended for weeks or months at a time when we are away from home. We do have another conventionally shaped greenhouse only a few metres away, and the residents there rate only a 50/50 chance of survival, depending on the regularity of my watering and tending habits. Both structures have timber frames and shade cloth coverage. Perhaps it is all good luck and not good management, or just good vibes.

The geodesic dome shape blends in happily with trees and surrounds, and although it's a bit of a challenge to erect, the end result looks aesthetically pleasing.

We set about building our geodesic dome with no instructions to guide us and only scrap timber to work with. Our only monetary outlay was for the green shade cloth.

Size and materials available were our main consideration after choosing the site. If you are prepared to go to the expense of buying the metal corner connectors and new dressed timber, then the job is much simpler. Our job was done on a shoestring, with materials from our scrap heap.



A full geodesic dome shape is made up of as many equilateral triangles as will make up an imaginary sphere, with all connecting points touching this imaginary sphere. For our plantarium, we wished to have a flat dirt floor, so we designed our dome to begin approximately 45 cm from ground level with those over 45 cm straight sides made from fibro (see the illustration). We hoped these sides would keep out snakes and toads and so far they have.

After deciding on the approximate overall size we set about cutting our framing timber into 1 & 1/2 metre lengths. To allow good head room inside, we needed ten side triangles and five roof triangles.

To connect each equilateral triangle at the points, we laid the whole frame work out on the lawn, in front of the site, flat.

At this stage a friend called in to see us. After observing our activities and our strange layout on the ground, he scratched his head and said that it looked like we were building an outer space travel ship.

We cut metal strapping into 26 cm lengths, allowing several extra lengths for inside reinforcement. The next step was to join up the triangular frames by screwing the metal strapping crosswise two ways. With the exception of the final join-up, which could only be done with the structure standing upright, we were now ready to do just that.

Now for the tricky part. The flat sided base sides were secured in position forming a starting point to sit the dome on. Then with 'yours truly' standing on a packing case and arms and legs going in all directions supporting the fragile framework, Himself completed the performance by screwing together the open side.

Things were now really taking shape. Mind you, there were a few frayed tempers, splinters, and grazed shins along the way, as is usual in these home built amateur projects. One of the side triangles left uncovered formed a doorway, with the 45cm base hinged to make a low opening door for easy access.

The framework we painted mission brown with quick drying acrylic paint, and then began to attach the shade cloth. We cut the shade cloth to the size of the triangular frames, allowing a little extra to overlap. A heavy duty stapler made easy work of attaching the cloth to the frames. We then nailed cover strips in place to cover the raw edges. These strips had already had a coat of brown paint before nailing.

Over each of the five roof corner connections, we tacked a circular piece of leather as a finish. On the centre top peak of the roof, we attached half a Japanese plastic fishing ball. These balls are made from very thick plastic in two pieces and joined, so one half made an excellent finish for the top peak. We sometimes find these balls washed up on our ocean beach, and they have many uses.

Hanging down in the front triangular doorway space, I attached a macrame-string hanging screen with dozens of little sea shells intertwined. This screen would help to keep out the nuisance winged insects, and look attractive as well. Inside, we added benches of different heights to cater for pot plants. A few hooks from ceiling points added another dimension for hanging plants.

With a little imagination, the geodesic dome shape may be varied but we've been happy with our plantarium. Visitors over the years have been very interested in its shape.

Hoof care for donkeys

by Marja Fitzgerald

Upper Mongogarie, via Casino, New South Wales.

DONKEYS are ideal work animals for a small acreage farm, for economic and other reasons. A donkey eats less than a quarter the feed of a horse, and prefers rougher feed — rich food will make them sick. As well, they are willing workers if gently but firmly trained, and are easier to train than a horse.

The only disadvantage of a donkey compared to a horse is that a donkey needs more hoof care. Donkey hoof care is something you can learn to do yourself, and is less difficult than shoeing a horse. Shoes for donkeys are seldom needed.

Unfortunately a majority of donkeys' hooves are neglected through lack of knowledge — so when you buy your donkey it is quite possible that its hoofs have seldom been handled, if at all. The first step for both of you is to learn to handle hoofs without trauma. To lift a hoof, stand beside the hoof you wish to lift, run your hand firmly down from the shoulder or rump to the fetlock, and say, "Lift, Matilda" (or whatever your donkey's name is).

To make the donkey take its weight off that hoof, so that you'll be able to lift it, lean your weight against her to force her weight onto the other leg. There are other methods, but I find this easiest. As soon as you have lifted the hoof, praise your donkey even if she didn't cooperate — she will soon learn to.

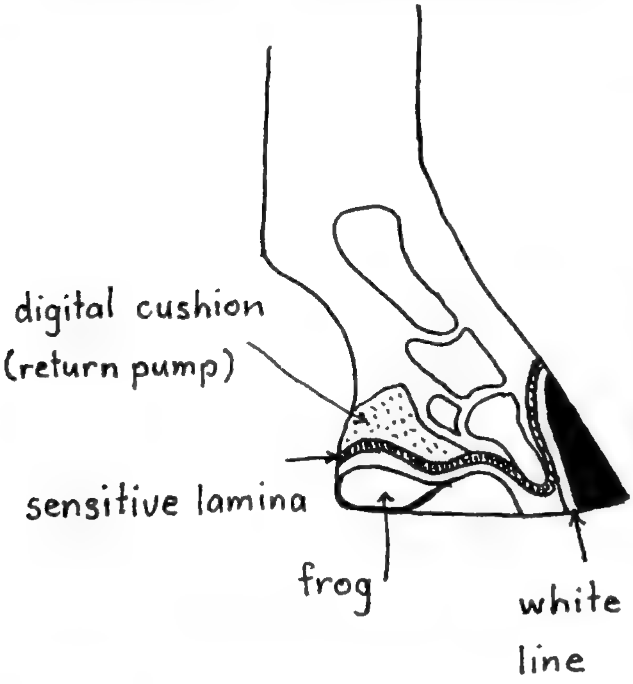


Figure 1. A cutaway section of a donkey hoof.

For the first hoof lesson, just lifting each hoof and holding it still for a few seconds is a good start. Don't put the hoof down if the donkey is struggling, or she'll think she's won. Speak calmingly and put the hoof down (don't drop it!) when she's being calm, saying, "down we go!" then praise her. It's a good idea to have a few little bits of treat, such as small pieces of broken bickies, or bits of burnt toast, or orange peel, in your pocket — when you put the hoof down, give her a little treat while praising her. Next day, repeat the lesson, but this time quickly clean out each hoof, wholly or partially, before putting it down. Each day do a little more work on the hoof — and withhold the reward if her behaviour isn't improving at least a little (unless it's nearly perfect already). Make sure you explain why: "Not good enough, Matilda — no bickie!"

To understand hoof care procedures it helps to know donkey hoof structure. Figure 1 is a cutaway section of a donkey hoof. The digital cushion above the frog is the 'pump' for the foot's circulatory system. As the frog makes contact with the ground, the pressure is transferred upwards into the digital cushion. This squeezing forces the blood back into the heart. Therefore, it is very important that the frog has contact with the ground for this pumping action to work. Donkey frogs grow much more vigorously than horse frogs, and need to be trimmed. All rotten parts should be cut away, and lateral clefts trimmed, or if non-existent, cut carefully.

It's a good idea to watch this procedure before trying it yourself, as you don't want to cut a vein or artery. If you cut only small amounts off, you should be safe, but I recommend attending a field day of the Australian Donkey Society if possible. There is a branch in each State except Tasmania (see end of article). Hoof care is a common topic at field days.

The weight-bearing parts of a donkey's hoof are the frog, wall, and bars of the hoof, and part of the sole. This is different to horses, who do not bear any weight on the sole, as it curves gently upwards straight from the wall. See Figure 2 for a comparison. Because donkeys bear weight on the outside part of the sole, you don't carve this away unless it is rotten (soft and powdery).

Donkey hooves need to absorb water regularly, otherwise they can become hard and brittle. This doesn't mean it's good for them to be kept on boggy ground — it definitely isn't — but if it hasn't rained for a couple of weeks, and dew has ceased, it is a good idea to moisturise the hooves by standing the donkey in water for a few minutes. If this isn't possible, you can always sponge the hoofs with water, inside and out. Perhaps a good time to moisturise the hooves

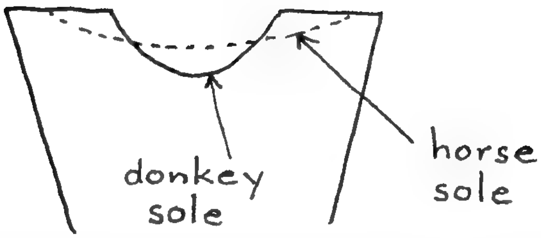


Figure 2. Because donkeys bear weight on the outside part of the sole, you don't carve this away unless it is rotten (soft and powdery).

is a day or two before you intend trimming them — it will make the work easier. Donkeys need moisture for good hoof growth — hooves grow faster during wet seasons.

Donkey hooves should be a continuation of the slope of the pastern, as in horses. Because a donkey pastern is steeper, by about 5°, than that of a horse, a donkey's hoof is smaller and steeper (see Figure 3).

Hoof care tools

Absolutely necessary:
Hoof knife   Usually available
Hoof pick   from produce stores
Hoof rasp
1/2" bristle brush — child's paint brush, from paper shop
Bottle of Gentian Violet — from the chemist
(These last two are for treating Seedy Toe, which all donkeys are prone to get).

Very useful:
A straight knife for trimming frogs
Hoof clippers or secateurs
'Hoof Aid' or a similar nourisher-cum-bacteriocide

Sharpening:
The sharper your knives, the less muscle you will need to wield them. A chainsaw file will sharpen the hook on the hoof knife. A miniature steel does a better job — we found one in a Barber sports store. The blades can be sharpened as an ordinary knife, on a whet-stone.

Procedure for hoof trimming

1 Sharpen hoof knife and frog knife.

2 Clean lateral clefts (see Fig 4) with hoof pick, and the rest of the hoof.

3 Trim walls down to level of sole, using hoof clippers, secateurs, rasp or even the hoof knife. Don't forget the bars — they need to be cut down level with the frog.

4 Trim lateral clefts of frog with a straight knife, and trim junction of frog and sole if rotten, cutting back frog rather than sole. Cut away any other rotten parts of the frog.

5 Rasp hoof flat; make sure surface is flat and level for the donkey to walk on.

6 Paint Hoof-Aid or similar to inside of hoof including the frog, and to the coronet (top of hoof where it joins the let — where hoof growth comes from).

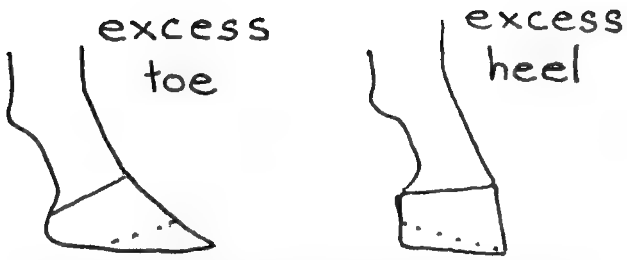


Figure 3. Donkey hooves, which are smaller and steeper than a horse's, should be a continuation of the slope of the pastern.

Note

Changes to hooves can only be done gradually, otherwise the donkey's ligaments, used to the old position, are strained by a sudden large difference. Also you must be careful not to cut too deeply, because you may cut into blood vessels. If you reach pink specks or a pink tinge, cut no deeper. So if hoofs are very overgrown, trim only, say 1/4" (6 mm) at the first go, and take some more off in 10 days. This allows the ligaments to adjust gradually and the blood vessels to retreat.

Seedy toe

Seedy toe is caused by a split or hole in the wall or sole — anywhere that dirt can get in. The moist dirt makes a good home for the seedy toe bacteria. When seedy toe gets to the blood supply (in the lamina) the bacteria cause an abscess to form — this causes lameness.

The most common site for seedy toe is between the

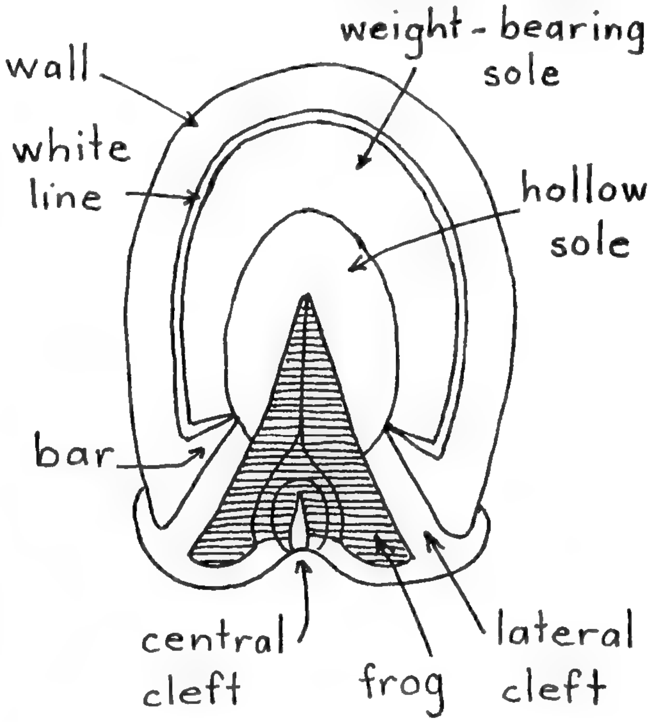


Figure 4. The underside of an ideal donkey hoof.

white line and the wall of the hoof — between the sole and the wall. However, it can also start behind a hairline crack in the wall, and go in from there. Wherever seedy toe is found it must be cut right away, and the hole opened up so it no longer forms a pocket for moist soil. A strong antiseptic such as Formalin or Gentian Violet (having used both, I prefer the latter for regular use) should then be painted in the cut area to kill the seedy toe bacteria. Packing with cotton wool is not advisable, because it does not allow air to circulate and so can allow bacteria to build up again.

A word of warning if you plan to use a horse farrier to care for your donkey's hooves. Firstly it is expensive. We find we need to do Matilda's hooves once a fortnight to make sure that seedy toe is kept under control — and at first we needed to do them at least once a week. A little trim often is better than a big trim every few months, because of the seedy toe factor. Secondly, horse farriers sometimes have misconceptions about donkey hooves. One of these misconceptions is that the heels should be kept long. This leaves the poor donkey in the equivalent situation of a person wearing high heels — not healthy, especially as they can't take them off.

Our knowledge of donkey hoof care began with joining the NSW branch of the Australian Donkey Society. Attending field days combined with practical experience doing our own donkey's hooves, and personal help from Margaret Smith, increased our confidence, as did talking with other donkey owners. We considerably added to our knowledge recently when we attended a Hoof Seminar run by Gerry Grundy, possibly the only donkey farrier in Australia. Joining the ADS is a worthwhile move towards gaining confidence in many aspects of donkeys, especially hoof care and donkey work training.

If you join the ADS (membership is $17 at present) you receive the Australia-wide quarterly 'Donkey Digest', a delightful magazine; and also the newsletter from your State branch, keeping you informed of donkey activities in your State. Some branches have events held in different areas of the State. Below are the State Secretaries of the ADS to write to with enquiries.

NSW Branch: Mrs Margaret Smith, 'Warrawurra', Bushells Ridge Rd, Wyee 2259.
Qld Branch: Mrs Sandra-Lynne Underhill, PO Box 121, Kenilworth 4574.
SA Branch: Mrs Sandra Nicholls, 72 Penney's Hill Rd, Hackham 5163.
WA Branch: Mrs Lesley Pascoe, 11 Warner Place, Greenwood 6024.
VIC Branch: Mrs Ann Linzner, 37 Tamworth Rd, Kilsyth 3137.

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Build your own voltage converter

by Peter van der Wyk

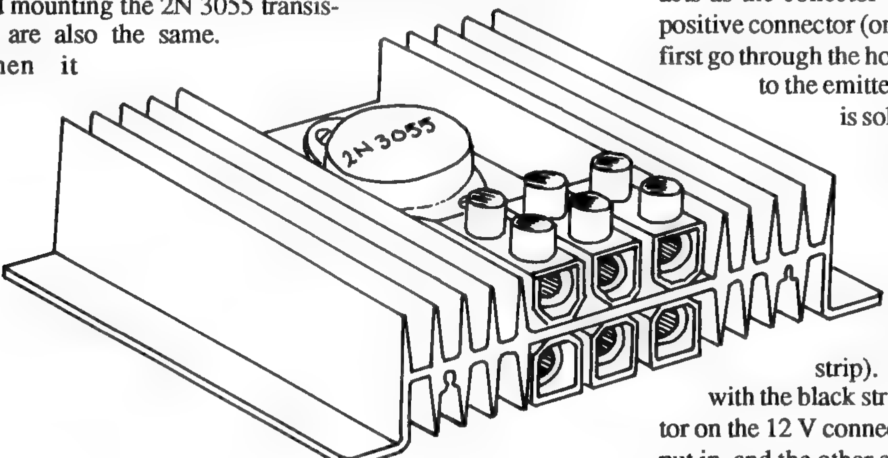
Nimbin, New South Wales.

I AM going to describe how to build a heavy duty regulated voltage converter. This will suit most situations where you need to supply a lower voltage from a 12 V (or 24 V) power supply.

The basic materials needed are similar to those required for the 50 watt shunt regulator (see EG 51). We can use the same heatsink, the same 2N-3044 transistor, and the same connector strip (2 pieces with 3 connectors per piece instead of 1 piece). We must also get the appropriate zener diode and the correct resistor. You can choose the zener and the resistor according to the table overleaf. The 6 amp diode can be used to lower the output voltage by 0.6 V if necessary.

Assembly

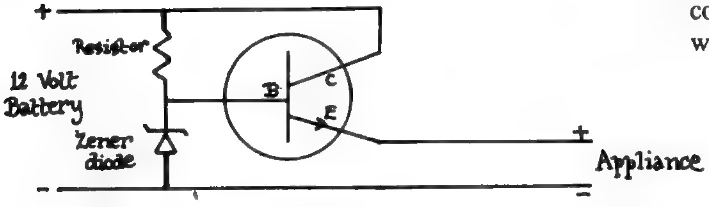
The assembly instructions for drilling the heatsink and mounting the 2N 3055 transistor are also the same. When it comes to screwing on the connector strips you will need longer 1/8 inch bolts to be able to bolt on a connector strip on both the front and the back of the heatsink, using the same drill holes.

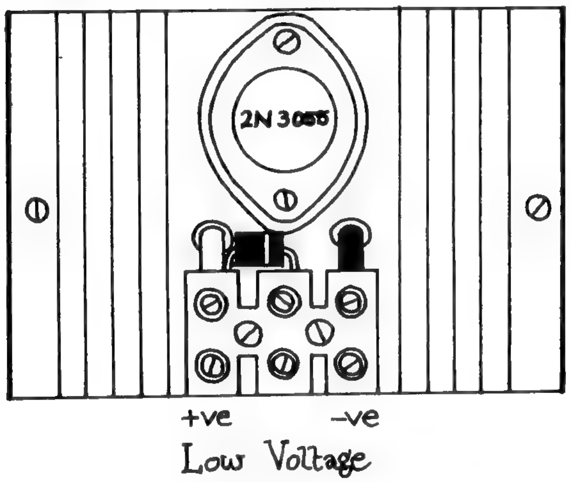


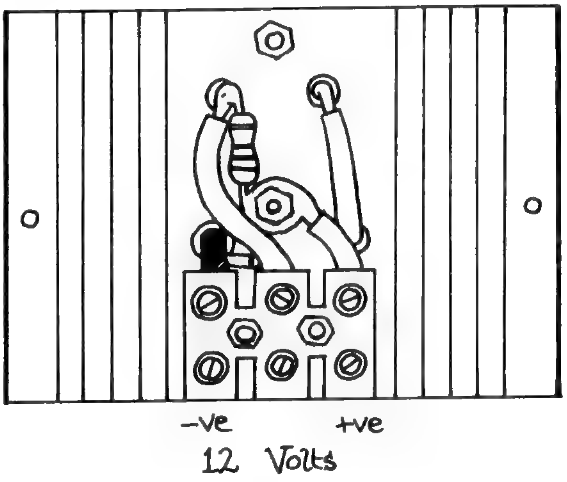
From here on the instructions are different. We will use the bottom connector strip for the 12 volt input and the top connector strip for the lower voltage output. For the sake of simplifying the circuit diagram and avoiding wires criss-crossing each other I will have the positive and negative end of the top connector strip the other way around. The two negative ends of the strip can now be connected to each other via a short length of insulated strip (preferably of a colour which indicates negative).

From here on you need to follow the circuit diagram closely. The wire from the 12 volt positive connector needs to be soldered to the solder lug under the nut and bolt that holds the 2N 3055 transistor. The casing of the 2N 3055 acts as the collector (C). The wire from the low voltage positive connector (on the reverse side of the heatsink) must first go through the hole in the heatsink and then be soldered to the emitter (E) pin on the 2N 3055. The resistor is soldered between the other pin on the 2N 3055 (the Base {B} pin) and the solder lug to which the 12 V supply is connected.

Also soldered to the base pin is a wire, the other end of which goes into the centre connector of the 12 V connector strip (the bottom strip). Finally, one end of the zener (the end with the black stripe) is screwed into the centre connector on the 12 V connector strip, along with the wire you just put in, and the other end of the zener goes into the negative connector immediately next to it. The zener must be the right way around for this voltage converter to work.







Battery voltage

Zener	6V	12V	24V
		Resistor value	
3.3	330	1K	2.2K
3.6	270	1K	2.2K
3.9	220	820	2.2K
4.7	150	820	2.2K
5.1	120	680	2.2K
5.6	68	680	1.8K
6.2		680	1.8K
6.8		560	1.8K
7.5		470	1.8K
8.2		470	1.8K
9.1		330	1.5K
10		270	1.5K
11		150	1.5K
12		56	1.2K
13			1.2K
15			1K
16			1K
18			680
20			560
22			330
24			120

The zener diode dictates the output voltage of this circuit. A 3.3 volt zener would give an output of 3.3 volts, a 6.2 volt zener would give 6.2 volts etc. You need to choose a 1 watt zener and a 1 watt resistor of any of the above values.

If you have followed the instructions correctly it should now function. Because we have introduced another voltage into your system you could connect the positive of the low voltage output of your new voltage converter to one of the spare pins on your multi-voltage switching power point (see EG 53).

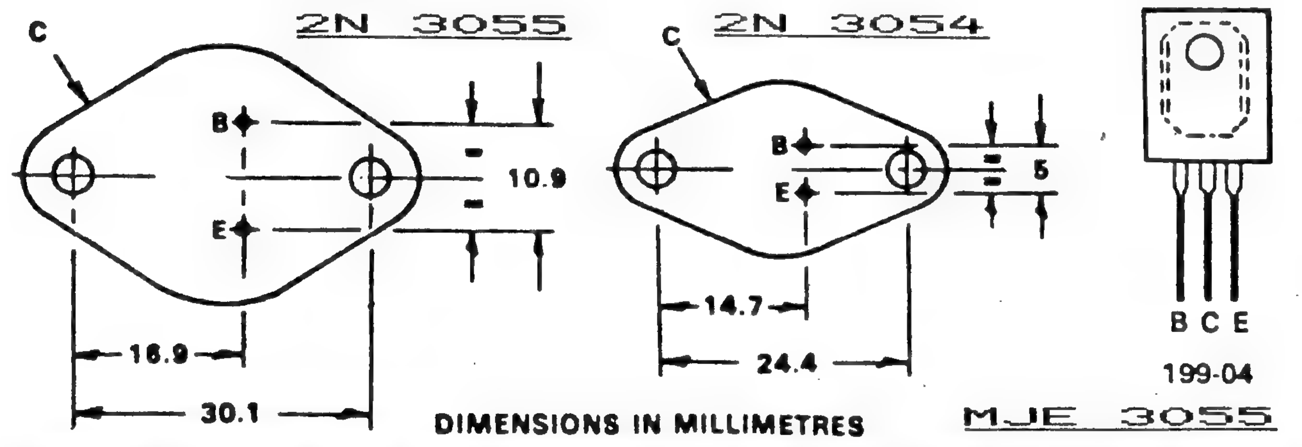
How it works

If you take a good look at the circuit diagram you will notice that the resistor and the zener connect between the positive and negative of the 12 volt circuit. The resistor will cause a voltage drop across to the base pin (B) and the zener will determine how large this voltage drop shall be. For instance, if you use a 9 volt zener there will be a 3 volt potential difference across the resistor. Pin (B) could have been the low voltage output, except that this part of the circuit will only handle 1 watt.

The transistor in effect amplifies the signal. The transistor emitter will sense the voltage difference between the collector and the base (3 volts) and amplify this via the collector. Remember that a 3 volt potential difference between (B) and the positive 12 volt point (C) is the same as a 9 volt potential difference across to the negative connector.

This voltage reducer should give you a very stable voltage and should be large enough to handle appliances of up to 4 amps. If you need more power than this you can connect two or more of these identical voltage reducers in parallel. You could even build them onto one larger heatsink, still only using one set of connectors for input and output.

If you don't need this much power but would like to build a smaller voltage reducer, to fit discreetly inside a radio for example, you could use a smaller transistor (such as MJE 3055 or 2N 3054) and a smaller heatsink and then you could solder all the connections and leave out the connector strips as well.



Depending on the power consumption of the appliance you want to run, you can use any of the three suggested transistors. On a small heatsink MJE 3055 is good for half an amp. 2N 3054 is good for an amp and with a finned heatsink, 2N 3055 can handle up to 5 amps.

A country living from pottery

by Jackie French

Braidwood, New South Wales.

MOST skills are city based and even if they are useful in the country they rarely generate enough work to make a living. Skills need to be both transportable and applicable to the area where you want to live.

Twenty years ago there was no one working as a potter in this area. Ten years ago there was one. Now there are at least six professional potters, all specialising in different areas, all making their living from their craft. This is in or near a town of under a thousand people.

Sandra Hand has been working as a full time potter for three years, two of them in her studio at the back of Studio Altenburg — an old renovated bank and one of Australia's largest private galleries. Three quarters of Sandra's work is sold locally, with the rest sent to galleries in Sydney and Canberra or sold at markets.

"The Sydney and Canberra sales are jam. The sales around here are the real bread and butter," says Sandra.

"I still find that surprising — that so much could be sold in such a small district. Every time another pottery starts up everyone wonders if their sales will drop. But everything just continues to grow. Maybe because all our work is so different. And you forget too how much locally-produced work would have been needed in a district before the days of chain stores and cheap imports. Even coffee mugs for everyone in the shire means an extraordinary number of mugs. And coffee mugs are always getting broken, so they have to be replaced. Add a casserole or two and Christmas presents and the odd vase for Aunt Glady's birthday and you've got work for quite a number of potters, even without the dinner sets and teapots and specialist bits and pieces.

"Every winter I sit out here with my hands in cold clay and swear I'm going to give it up. Then every spring I can see the blossom on the plum tree through the door and people start coming out to chat and watch and . . . I realise why I am here."

"People get into the habit of buying things locally. To some extent the more of us there are, the greater the choice — and the more we win local custom. It's the Woolies china we're competing with, not each other.

"I specialise in utility ware — things that are dishwasher and microwave proof, teapot spouts that don't drip and mug handles you can get your fingers through. I always keep a couple of standard glazes too, as well as experimenting, so people can gradually build up a set. That's easier in a small town — people can just wander in and buy a soap dish or another canister or a replacement plate whenever they need one.

"I chose potting deliberately because it was a portable skill, one I could take to the country. I worked as a barmaid here for about three years while I got enough capital together for a kiln and other equipment. That's the only way to do it — work part time at whatever you can get while you build up, or start with enough capital. I'd say you need at least $15,000 if you are going to do it properly — and more to live on while you're waiting for the first cheques.

"We're lucky in Braidwood. We've got the Canberra-to-the-coast tourist traffic, people come from Sydney because this is a historical town, and bushwalkers or canoeists come through to the national parks. This is starting to become a well known craft area — people come here especially to buy. That gives you a choice of outlets, too.

"Studio Altenburg is an excellent spot for me. There are regular exhibitions of all sorts of craft and art all through the year — weaving, watercolours, jewellery, sculpture: it's always changing so people are always coming back to see what's being exhibited. The regulars' work is always on show, so we benefit from the extra interest generated by the visiting exhibitors.

"It's not an easy way to make a living. Like farming, I think if you can make $20,000 out of potting you could make $40,000 at anything else. But it's a way of making a living where I want to live. It's a skill I can take anywhere. And it brings a lot of pleasure to people to give them something useful and beautiful at the same time.

"Every winter I sit out here with my hands in cold clay and swear I'm going to give it up. Then every spring I can see the blossom on the plum tree through the door and people start coming out to chat and watch and the currawongs start pinching the dog's food and I realise again why I am here.

"You get people coming back to praise the teapot they bought two years ago, or to order another six small

Sandra works in converted stables at the back of Studio Altenberg in Braidwood, New South Wales.

soufflé dishes or a dozen mugs with all the family's names on. You get real pains too. Last Mother's Day a man and his two kids spend nearly an hour choosing a pot.

Then on Monday a woman came in with it — she didn't like it — and swapped it for two others. I wanted to tell her she didn't know when she was well off, throwing away all the love that had gone into buying it. But of course you don't."

At the back of the Studio Altenburg are the converted stables where Sandra works. Visitors to the studio or to the café at the back can wander through the courtyard to watch her at work, to order specialty items or simply to see how a particular pot is made.

"Business is building up steadily. It's got to the point now where I really need a partner. At the moment I'm split between building up stock and selling it. One person selling for two would be much more efficient. I reckon a partner would mean at least a trebling of turnover, sharing things like rent and power bills. And any craft can be lonely when you're working by yourself, especially in winter. It's a good way to make a living. Not lucrative — but you have your independence, the satisfaction of producing things that people like, and the flexibility to live and work where you want to."

Anyone interested in working with Sandra Hand can contact her on (048) 422534 early mornings or evenings, or write to her care of Studio Altenburg, Braidwood, NSW, 2622.

Towards food self-sufficiency

On one acre or less. Part III.

"What was paradise but a garden, An orchard of trees — and herbs, Full of pleasure and nothing there but delights."
—William Lawson.

by Arthur Brotheridge
Devonport, Tasmania.

AN ADEQUATE supply of vegetables is the quickest and easiest food source that can be achieved, but at the same time, you can start plantings to produce fruit, and a supply should be starting in the second or third year.

Much as we may enjoy bananas, mangoes, and pineapples in the southern temperate parts of Australia, we are not able to grow them here but we can grow a wide range of trees, vines, canes bushes and brambles. Strawberries and most of the berries can also grow well, and some of these will not do so well in the warmer areas.

I think apples are our most valuable fruit, and that is fortunate for us, for few fruits are so beneficial to health. I doubt whether I could eat any other fruit every day of the year for a lifetime, and not become tired of it. However, that would not be acceptable if there were only a few varieties, and yet I venture to predict that in the future, for most Australians, there will only be three different apples available — Granny Smith, Golden Delicious, and Red Delicious (of which there have been a number of developments, for example Richared, Hi-Early, Starkrimson, Royal Red, to name a few of them, but almost all of which, in my opinion, are poor eating). Some nurseries may sell trees of 10 or 12 varieties, often now with two or three varieties in one tree.

There are, in fact, hundreds of varieties available, but only as grafting or budding wood, and as few people would want dozens of trees, the answer is to grow several varieties on one tree. It is the only answer for the backyard gardener wanting a number of varieties, and even for the ones with acres there is no point in making extra work and growing more fruit than you can adequately cope with. Propagating by grafting and budding is so practical, and such a fascinating hobby, and not difficult for the average handyperson, that I would urge everyone who can to become familiar with it. I will give two examples of this in my article in the next issue (EG 59).

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I have previously expressed enthusiasm about the flavour of good fruit and would like to make up another article on the aspect of 'flavour where did it go'. Perhaps I should give my qualifications for doing so. My philosophy is well stated by Oscar Wilde when he said, "I'm not a fussy fellow, the best is good enough for me." Also, while I may have a slight hearing problem, and eyesight a little less than perfect, my taste buds are alive and well, highly developed, operating at maximum efficiency, and I like to think, being treated with the respect they deserve.

It's logical then, to look for and enjoy the best of flavours in all eatables if you can. Perhaps it is presumptuous to suggest that I have chosen the best, say, of apples when there are in fact thousands of listed varieties, so I will just claim that I have a number of good varieties, and it is no more effort to grow good fruit than poor or mediocre fruit. The whole exercise of growing your own is worthwhile, but the fruit is the jam of the cake. The varieties you grow will decide whether you have cream on it too.

There are many desirable qualities in apples and no one variety has them all, but the home gardener doesn't need to be concerned with ones which may be vital to the commercial grower, like travelling without diminishing appearance, and the one quality that I look for now is flavour.

Different people's perception of this can vary too, so it's a good idea if possible to taste the fruit before deciding whether it's worthwhile grafting. (That applies especially to the lesser known varieties. Many of the better known ones can be recommended as being good fruit.) I have decided that the taste test will have to be more rigorously applied in my own case, although I have to admit that I have relented in one case. I've got one for the name alone: who could possibly resist Charlie Cotton's Mount Braddon Beauty?

Most temperate zone fruit need a climate which falls below 45° F (7° C) for considerable periods through winter (this is the chill factor) and, in the case of apples, amounts to 1200 hours. We have these conditions in Tasmania, also in most of Victoria and in the higher parts of New South Wales and Queensland.

Now I am working towards a year round supply of apples without cool storing. The first of the season is an unnamed variety which is quite acceptable for eating on Christmas Day. Others soon follow and the main named variety is Gravenstein, suitable for eating from late January to March. Then follow Coxes Orange Rippen, Golden and Red Delicious and Johnathon, and, ideally, these can be picked and eaten ripe from the tree. Other varieties can be picked at the optimum stage, that is at the first sign of change from green to yellow (in the case of Granny Smith) but some time before ripe, and then stored to eat at different times. Croftons ripen first, then Sturmers, Granny Smith which keeps till October-November, by which time it is a golden yellow, and then Lady Williams (a late apple developed in Western Australia).

I do know someone whose teenage children insist on eating only Granny Smiths from about March onwards when they are very hard and green. For people with that attitude towards apples, the ideas that I am trying to convey would not be of any interest.

To store the fruit I have a rack with 12 trays, each about 90 x 60 cm and holding in one layer, about 18 kg. The idea is that fruit can be inspected often and those ripening or developing a blemish can be eaten first. Fruit will keep till November-December although by that time we can get days with summer temperatures. A cellar would easily preserve apples till the new season starts again. However, the number left by October is down to about two cases and perhaps an old refrigerator, opened at night to catch cooler temperature and closed in early morning, would be suitable.

Over the past few years I have tried a number of different varieties; mainly the old English ones, which have superb flavour, and (in England) good keeping qualities. I now have about 10 of these fruiting: the Pippins, Russets, Blenheims and others. The flavour is there but not the keeping qualities. They are all ripe before the end of the picking season. The Cox's Orange Pippin is, of course, the most flavoured apple in England, where it keeps well, but here it is just another good midseason variety.

Now, in what may be a last attempt to find a few more good late keepers, I have about 20 scions from our local Department of Agriculture to be grafted in September-October and perhaps in the future I shall be able to recommend a few as good long keepers. The eight or nine mentioned above should give a good spread of fruit. However, as these scions are still 150 mm sticks with four buds on, it will take a few years to find the best and then multiply them to produce the ideal harvest.

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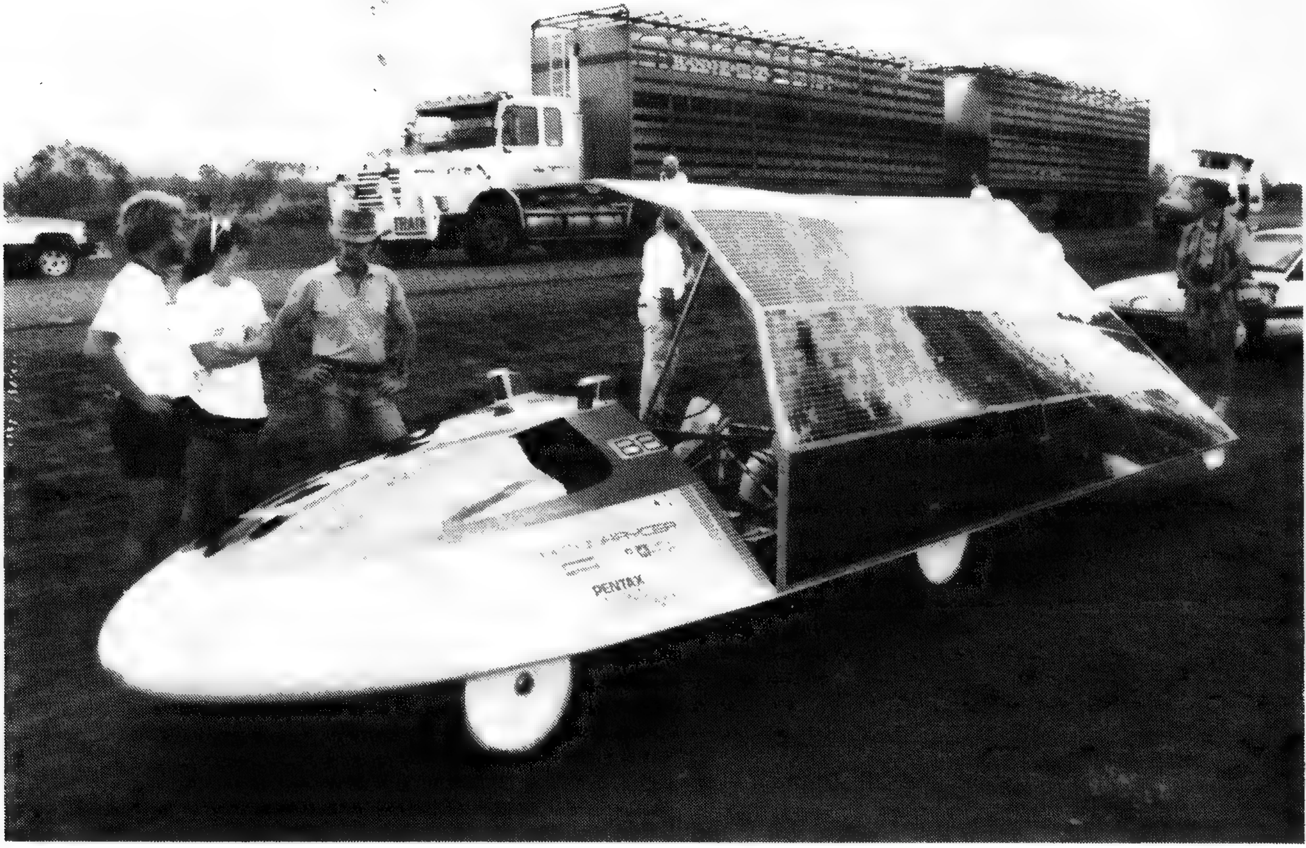

photograph courtesy of Tim Pemberton Publicity.

THE WINNER of the world solar car challenge race from Darwin to Adelaide is the General Motor's entrant, the three million dollar 'Sunraycer'. The GM car (pictured above, outside Alice Springs as driver, Molly Brennan, chats to a truckie) crossed the finish line at Seppeltsfield outside Adelaide after travelling the 3200 kilometres in 44 hours and 54 minutes, at an average speed of 66.92 kmh. The car was unofficially clocked at a world record 113 kmh and camera crews filmed it overtaking conventional cars, while travelling uphill!

The "flying cockroach's" main advantages were its aerodynamic computer design, lightweight frame, constructed from kevlar, and its revolutionary photovoltaic cells — the same kind used to power the Aussat sattelite.

Gallium arsenide is the solar panel material used by the GM car and we hope to have a report on it in the February issue.

The second placed entrant, the Ford Model S, finished in 67 hours after averaging 44.63 kmh. Third was the Swiss entrant, the Spirit of Biel, which finished two hours behind the Ford car and would have come second but for a minor collision during the race.

Next came *Australian Geographic*'s, Team Marsupial, followed by cars from the Darwin, and Chisholm Institutes of Technology. The first private entry to finish was the Solar Resource team car, which arrived in Adelaide on 17 November, 16 days after the race started. The remaining cars in the field were averaging 20 to 30 kmh in conditions which ranged from hot and windy to cool and cloudy.

Race organisers expect 10 to 12 cars eventually to finish although the race officially ended on 11 November. The cars from Goodwood and Morphett Vale high schools performed remarkably well given their resources and experience. The Goodwood car finished in Alice Springs while race organiser, Hans Tholstrup, told Earth Garden he expected the Morphett Vale car to continue to Adelaide. The Morphett Vale car, The Photon Flyer, was designed and built by the students featured on this issue's front cover.

We hope to bring you an account of their experiences in the next issue. Participating students will submit articles to Earth Garden and we shall select and edit the best story to appear in the February issue.

Coriander — the curry herb

by Liz Sinnamon

'Elizabeth Herbs' farm, Nambour, Queensland.

CORIANDER is one of the bitter herbs of the passover, and in the Bible the seed is likened to Manna, tasting 'like wafers made with honey' (Exodus 16.31). Nothing equals the unique flavour of this valuable herb, which imparts a delicious flavour to Indian curries, ethnic and Oriental dishes.

Coriander has lacy, feathery foliage, with an aroma quite different from any other herb. The plant has a cylindrical stem, reaching a height of one metre, with broad lower leaves and the higher ones finely segmented. The flowers are fairly large, white or pale pink, with reddish-yellow fruit. With the strong spicy aroma of the fresh leaves, together with the delicious fragrance of the ground seeds, this herb is an essential addition to any herb garden.

Coriander grew first in Southern Europe, and centuries ago found its way to many other countries. The Romans introduced it to Britain, and corinder also found its way to India, the Middle East, China and Peru — lands where it has become a favourite herb.

Coriander is easy to grow from seed. Choose a position which is sunny and sheltered. Work the soil until it is fine and crumbly, adding a little lime if the ground is acid. Sow the seeds in spring and autumn in temperate zones, or in autumn and winter in sub-tropical and tropical areas. Place seed directly into the soil 12 mm (1/2 inch) deep, 30 cm (12 inches) apart. If planted during hot weather, the plants will quickly go to seed, producing few sprays of foliage.

The fresh leaves may be picked at any time during the growing period. For drying, spread leaf sprays on sieves in a warm airy place, and when crisp, crumble the leaves from the stalks and store in airtight containers. To harvest the seeds, cut off all the heads when they are about to drop, and dry them on sheets of paper in a shady place, exposing them to the sun when possible. They are ready to store when the fruit falls away from the shrivelled flower-heads if given a light shake. Store in an airtight container and remember to select seed from the best plants for replanting the next season.

Culinary

The fresh leaves have become very popular recently for use in Indian curries and Oriental dishes, and impart a unique flavour to vegetables and rice. The ground seed flavours fish, poultry and meat, and is an essential ingredient when mixing a curry blend. It is also useful as a spice in fruit cakes, gingerbread, biscuits, pastries and bread. The ground seed is also excellent for sprinkling over apples, pears, and peaches while baking. The ground seed has been used traditionally in breads and cakes and is particularly effective with carbohydrates.

Coriandrum sativum **— a great addition to Indian curries or any other food which tastes good with a spicy 'edge' to it. Coriander is regarded medicinally as a good digestive.**

Medicinal

Coriander water is used to ease windy colic. When crushed and inhaled, coriander seed will relieve dizziness. A soup of coriander leaves and barley water can be used as a tonic-stimulant for convalescents. The dried seeds and oil are used both in diseases of the stomach, and in the treatment of malaria.

Companion planting

The strong pungent odour of the leaves acts as a valuable insect deterrent in the vegetable garden, and likes the company of chervil. Honey bees are also attracted to the numerous coriander flowers.

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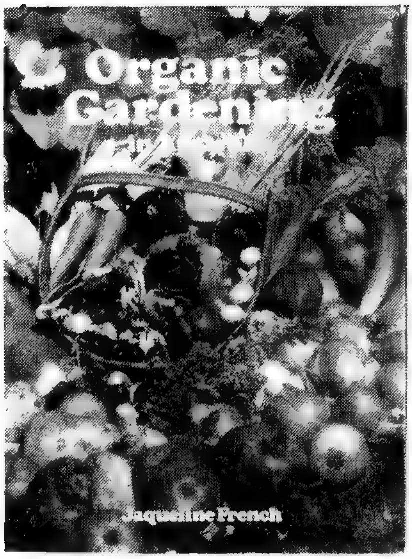

ORGANIC GARDENING IN AUSTRALIA
by Jackie French, 192 pages, large format hardcover, Reed.

JackieFrench, a regular writer for EG, has written this comprehensive guide for a wholistic approach to organic gardening. This book will teach you how to work with the elements of your garden, rather than against them, for a productive and healthy supply of chemical-free food. Jackie's book is a vital aid for treading the Earth Garden path to self-sufficiency.

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* If it reaches us by 31 December, you're in the running for a pleasant Sur-prize (see page 2)!

Creative beermaking at Confest '88

by Fred Brademann

Mt Oak, New South Wales.

OFTEN people fail with their own beer and are discouraged either by seeing fog in the glass, heavy froth directly after opening the bottle, little yeast pieces rising after a few seconds or through the special smile of their visitors sampling the home brew.

For my first 1000 capped and uncapped bottles I was wearing those foster-glasses. But the 1001st bottle crown was under such a pressure on the bottle that it smashed my foster glasses and opened my eyes. I saw a little tarragon leaf in a puddle on the table. I tasted what was left of the beer. It was good, having a pleasant taste of tarragon, sparkled like champagne and was simply delicious. I started a big batch of beer and bottled 30 bottles with tarragon, rosemary, sage, horehound, estragon and gumleaves. I put one leaf in each bottle. Every bottle tasted delicious.

Since then I have never tried to compete with any brand available in Australia, never have I been told that my beer almost tasted like a 'Coopers' by my friends, and never have I had to spend eight dollars on a Coopers brew tin again.

I bought 2 kg of malt extract, harvested a handful of horehound leaves, added some gumleaves and three tablespoons molasses, and cooked the wort for one hour. Then I dissolved 1.5 kg of local honey in water and added enough creek water to fill the 5 gallon drum right to the top. The beer was cheaper and tasted better.

If you love your homebrewed beer, you certainly love your little helpers (the yeast bacteria) as well. Brewing is a creative process involving living organisms — the yeast bacteria to do the work for you. They are your friends, so don't give them cold showers — keep them warm and happy working away. My little friends told me how dreadfully they suffered under 16 degrees C during the night. It's not too bad for them to live between 18 and 25 degrees, but they enjoy their most creative life between 25 and 35 degrees.

I love my friends, so I keep them warm. While being on mains power I put them in a cupboard with a 100 watt lamp and a little thermostat. After moving into a mudbrick house, I thought that winter would bring the beer making to an end. But my thirst for a good homemade beer kept me thinking and I found a warm place. I hang a big wooden box over our gas fridge and regulate the temperature to the desired 25 to 35 degrees using blankets and a thermostat. Another suitable place could have been the hot water storage tank from the woodstove or solar hot water panel. My yeast bacteria friends survived the winter and so did I, having a good bottle of beer to drink for my visitors and myself. But things changed seriously when I moved to Mt Oak in May. I brought my little caravan over and a month later we drank my last bottle of gumbeer champagne to celebrate the first birth at Mt Oak.

That was fine, but I had no bottles left. Again my thirst for a good brew began to get me thinking and I installed a little wood oven in the middle of the caravan. The flue pipe goes through a little cupboard, which I expanded enough to take a 10 gallon rubbish bin, and insulated well. I regulate the temperature with the help of a thermometer and the cupboard doors. Ever since then my caravan has been warm and cosy and my little friends started happily to work and create. Because it is so nice and warm the first fermentation takes place in only three to four days until the hygrometer drops down to 1001 or 1003.

I leave the beer for at least seven days to settle down before bottling. I don't use any chemicals to clean the bottles or the bin because my little friends and I hate the chemicals. Clean boiling water sterilises everything in contact with the beer. It's a bit of work, but it is worthwhile — you can lose bottles through infections and impurities.

My final and best recipe? I am still experimenting with all kinds of herbs, with fruits and using chicory roots instead of barley; my ideas flourish and my tastebuds keep me creative. I hope I never find the best recipe.

I open a bottle of horehound stout when I feel a cold coming on — it's bitter but it helps. Rosemary beer is for my ardent desire, and I usually drink gumleaf beer because I love the taste so much. Lavender beer calms me down and mandarin beer is bubbling at the moment. Mango beer is like champagne and a dream for my tastebuds.

'Normal beer' could become something special, made from a kit plus some leaves from a herb or plant you like. Add this leaf during the first fermentation. Or: 2 kg malt extract, half a handful (20 g) of horehound leaves, 1 kg sugar, 5 gallons water (perhaps 10 gumleaves), and yeast.

For beer champagne, the first fermentation is as above. Add one leaf of your liking to each bottle, keep them warm for 14 days, then store them for at least two weeks in a cold place and drink them with friends on birthdays and other special events. If you like this beer please keep two bottles for the new year event described below.

Creative beermaking is an old fashioned activity without chemicals, using our tastebuds, common sense and creativity. Once you lose the pressure to compete with all those producing chemical beers, you self confidence will grow and you will create real beer.

And now for my creative beermaking proposal: Let's have a homebrew competition on New Year's at the Confest '88 at Mt Oak. I will hold a workshop on homebrewing and we can judge the best homebrew creation.

If you are interested in Confest '88 and the homebrew competition get involved now and write to us about your homebrew or for more information.

Send to Confest 88, PO Box 6, Cooma, NSW, 2630.

National health council approves home births

Many hospital obstetric services are inadequate, and their labour practices are insensitive and outmoded, according to the Canberra-based National Health and Medical Research Council. In a report on home births and alternative birth centres, the Council has found no evidence to suggest that giving birth in hospital is preferable to a home birth, despite fears about the safety of home births.

The report also criticises the availability of obstetric services to cater for community demands. Birth centres, it says, are not able to meet the increasing demands among women for a more sensitive environment in which to give birth, while the physical environments of many labour wards are less than welcoming.

"There is no need for labour wards to resemble operating theatres," the Council said recently while releasing the report prepared by a working party. It said women should be able to choose where they gave birth, but their needs were not always met. Babies born at home account for less than one per cent of all births in Australia each year.

"But for these women, it is important that they not be damned for putting the baby at risk," said Dr Cathy Mead, secretary of the working party. "Home birth is a specific choice for some women and not an alternative."

The report found that inadequacies in some labour wards ranged from hospital staff limiting visits to the husband only, to attempts to stop women taking up certain positions during labour, such as squatting. The report said many features of birth centres, including their pleasant decor, could be incorporated in hospitals. If home birth was to be a safe alternative for women, relations should improve between home births and hospital practitioners and parents and support people.

"If you give careful consideration to the individual person, her own circumstances and the skills of the attendants, there is no reason to believe that a home birth is any less safe than a hospital birth," Dr Mead said.

"For someone who has particular problems, all this modern technology is vitally important. But there is a group of women who have no need for all this modern technology and if they want a home birth that should be available."

—The Age.

The Wadeville Pilot Project

NSW Government-supported Multiple Occupancy (MO)

The Wadeville sustainable community rural settlement project in northern New South Wales backed by the NSW Government is now well underway (see Earth Garden 53, page 15). All development conditions required by the local Kyogle Council for approval of moveable (temporary) dwelling licences have been met. These included a new gravel road entrance and running water supply to each temporary site, for fire fighting purposes.

Eight households have now moved on to the 215 acre property located between Nimbin and Kyogle to the north of Lismore.

Some workshops in communication, conflict resolution and meeting skills have taken place and we are about to begin renovating the existing farm house.

A number of households are on their way to joining the project and a few vacancies still exist for joining this first intake of up to 50 percent of the total of 28 households. They will eventually form a cooperative, take over title of the land from the Department of Housing, and then continue to draw loan funds to complete the land development and begin constructing their homes.

The $1.25 million available to participants of this project may be drawn on if and as they need it. The initial deposit required of each household is only $500 and then repayments will be required at 27 percent of household income per week. Each household may borrow for their home construction as they need it, up to a limit depending on their income level.

The community so far has a strong focus on environmental and interpersonal care and is aiming at self reliance in food and energy production and is considering a variety of income generating concepts.

More details can be obtained by contacting the Nimbin Neighbourhood Centre, Cullen St, Nimbin, 2480. Mail should be marked for the attention of D B Leggett.

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Thoughts, words and deeds to save world rainforests

by Nodi Mather

Rainforest Information Centre, Lismore, NSW.

WORLDWIDE we are now destroying an area of rainforest equal to the size of Austria every year. That is equivalent to the Sydney Cricket Ground every second, and it's accelerating.

As you read this article, deep within a rainforest being logged at that rate, not a single tree would be visible by the time you finished reading.

The majesty of a tropical forest is due not only to the trees, many of which emerged from their seeds before the birth of Christ, but to the whole ecosystem of birds, insects, reptiles, mammals, amphibians and smaller plants.

When we fell a mature tree, we destroy innumerable habitats. The tree is like an apartment block, from the forest floor to the canopy, perhaps 100 metres above. Every vestige of niche is occupied — the diversity of form is awe inspiring. Take the trees themselves for example: there are more species in a couple of hectares of North Queensland tropical moist forest than in the whole of Europe!

There are 19 surviving species of the first flowering plants on Earth and 13 of them cling to existence only in the wet tropics of Queensland between Townsville and Cooktown. Refuges in the Daintree region have continuously supported rainforest for 130 million years. *Homo Erectus* has been around for perhaps half a million years.

Most Australians can see the folly of ripping out timber from such areas. But what does that mean for tropical forests in other countries?

If we keep demanding tropical timbers for our dwellings, furniture and, dare I say it, our Parliament Houses, we put the onus of supply onto countries like Malaysia, Indonesia and the Philippines. One of their few domestic assets is their native forests.

To reduce our demand, in Australia, the Rainforest Information Centre is campaigning to educate architects, builders, cabinet makers and the public by numerous means, such as the pamphlet 'Boycott Rainforest Timbers' (copies are available from the Rainforest Information Centre at PO Box 368, Lismore, 2480).

Similar programs are underway in the United Kingdom, United States, Netherlands, Germany and Switzerland. Non-government organisations, which feel just as strongly but are based in countries of origin, must take great care in their activities due to the highly political nature of the timber industry in most of these countries.

Last year an organisation of 41 timber trading nations formed the International Tropical Timber Organisation, decided on Yokohama as its headquarters and appointed Dr Freezaillah of Malaysia as its Executive Director. The organisation held its first full council meeting during March 1987 at its headquarters in Yokohama under its new chairperson Denis Konan of the Ivory Coast, Africa. After much discussion, a major part of its budget — over US$2 million — was earmarked for work on reforestation and research into sustainable logging practices.

This International Tropical Timber Organisation (ITTO), a glimmer of light on the smokey, clear felled horizon, was given a big fat miss by the Australian Government. The delegate from Papua New Guinea, among others I spoke with, expressed surprise at our absence. Incidentally, a large Japanese company has built a plant in the PNG highlands, to log their Kauri pine forests, and for what? Disposable chopsticks!

These disposable chopsticks, 40 million used per year, are the subject of an energetic campaign against their use in Japan — the Waribashi Campaign. Concerned citizens of the Waribashi Campaign present chopsticks made from bamboo to restaurant goers with a little leaflet explaining the reason for the gift. A token perhaps, bit it sets the Japanese thinking about the consequence of their consumerism. Japan now leads the world as a consumer of tropical timber.

If we do not alter our patterns of exploitation, we will certainly see the last of our tropical forests within a single lifetime. This is becoming more of a survival issue than a conservation issue.

For many countries' forests, it is already too late. Thailand, once world renowned for its magnificent teak forests, is now a nett importer of tropical timber. The Ivory Coast has virtually exhausted its supplies. India will be without its native tropical forests by 1990, as will peninsular Malaysia.

In Malaysia, it is not only the flora and fauna that are being lost, its hunter/gatherers, such as the nomadic Penan people, are presently lying in front of bulldozers as they see their home rapidly disappearing.

We must use less, grow what we consume and persuade others to behave as responsibly.

May we all win the race.

Please do not use these rainforest timbers

Australian

ASH: Silver, Red and Yellow
BEAN: Black, Red
BEECH: White, Brown, Myrtle
BRUSH BOX
CEDAR: Red, White
EBONY: Grey, Black
MAPLE: Queensland
OAK: Tulip (Black and White Booyong), Silky, Bull
NATIVE PINES: Kauri, Bunya, Huon, Hoop (non-plantation)
QUANDONG (Blue fig)
ROSEWOOD
TEAK: white, black
WALNUT: Black, Queensland

Imported

AGATHIS (Kauri)
KALANTAS
KAPUR
KERUING (Apitong)
MERANTI, SERAYA or NARRA (various rosewoods)
PACIFIC MAPLE: (Red,WhiteandYellow)
PHILIPPINE MAHOGANY, LUAN or TANQUILE
PHILIPPINE RED CEDAR
RAMIN
RWILA (New Guinea Hardwood)

Note: Oregon and Western Red Cedar,from the US, may not be from plantations.

The alternatives

Most rainforest timbers are used for internal purposes. All of these uses can be replaced by plantation softwoods and eucalypt timber where strength is necessary. Recent developments in the pine industry show great promise and expand the versatility of pine enormously.

Within five years Australia's softwood plantations will supply more than enough wood to replace the rainforest timbers we presently use.

In the meantime plantation timbers from New Zealand can fill any shortfall in supply. Plantations of hoop pine in Queensland are ready for harvest but are left standing because the current demand is low.

What we can all do

We can all familiarise ourselves with what rainforest timbers look like and stop using them. Most timber merchants need to know that you are choosing not to use rainforest timber and why you prefer plantation timber.

We can use secondhand timber wherever possible, encourage tree planting and reforestation wherever possible and tell architects and builders about the real costs of using non-plantation timbers.

You can write to the Australian Aid Development Bureau (ADAB) asking them to fund reforestation in the Third World (GPO Box 887 Canberra, ACT, 2600). Or to the Department of Trade asking that they impose a tariff on imported timbers coming from natural forests and that this money be used to promote sustainable plantation development in the Third World (Edmond Barton Building, Kings Ave, Barton, ACT, 2600).

You can make a donation to the Rainforest Information Centre Rainforest Timbers Campaign. If you want your donation to be tax deductible send it to the ACF, 672B Glenferrie Road, Hawthorn, 3122, indicating a preference that the money be used by the Rainforest Information Centre for their Rainforest Timbers Campaign.

Earth Garden tree tax

Starting with the current issue of Earth Garden there is a tree tax incorporated into the cover price of each copy bought. The tax will total approximately $300 each issue (19,000 copies at 1.5 cents per copy), and will be allocated to different groups around Australia each issue for reforestation purposes. It takes approximately 26 trees to produce each edition of Earth Garden (1.5 tonnes of paper, at approximately 17 trees per tonne) and the tree tax each issue should supply sufficient funds to buy at least 750 to 1000 seedlings. The first tree tax will go to the Rainforest Information Centre in Lismore.

Timber uses and suggested alternatives

	Radiata	Clear Radiata	Carrib'n Pine	Slash Pine	Cypress Pine	Hoop Pine*	Tas. Oak	S'thrn Ash	Rose Gum	Other Eucs	Tas Blackw'd	Particle-board	Fibre-board
Furniture	√						√	√	√	√	√	√	√
Joinery	√						√	√	√	√	√		
Panelling	√		√		√							√	
Flooring	√		√	√	√					√		√	
Moldings		√				√	√	√					√
Cladding	√								√	√			
Decking	√									√			
Structural	√		√	√				√		√			
Dec'tive Ply	√	√		√		√	√	√	√	√	√		
Exter'r Ply	√	√		√					√				
Struct'l Ply	√			√					√	√			
Marine Ply						√							

*plantation

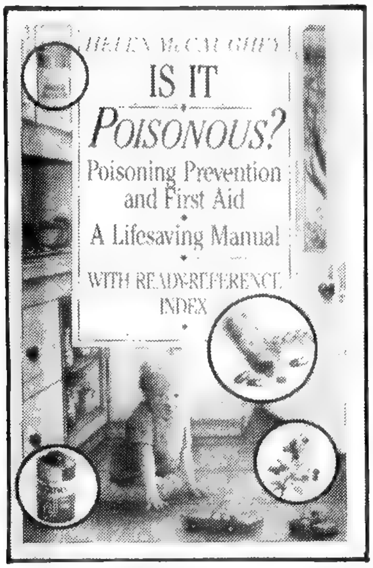
EARTH GARDEN REVIEWS

Edited by Sophie Masson

Is It Poisonous? by Helen McCaughey, published by Angus and Robertson, RRP $8.95.

THIS is a book to be kept close at all times. It's a very handy and comprehensive first aid as well as poison prevention kit. Helen McCaughey is a pharmacist who worked for nearly ten years at the Sydney Poisons Information Centre, and she gives invaluable advice in this book.

She discusses all the things that can go wrong — poisoning with chemicals, drugs, improperly processed food, plants, animal bites and stings, with advice on how to treat as well as prevent poisoning. There is an alphabetical list of poisons, with a guide to their toxicity and a quick guide to treatment.


HELEN McCAUGHEY'S
IS IT POISONOUS?
Poisoning Prevention and First Aid
A Lifesaving Manual
WITH READY-REFERENCE INDEX

Despite the folk myths there are very few plants virulent enough to cause death. Although some are highly toxic (such as oleander and rhus) they usually taste so unpleasant that it is unlikely a child will overdose on them! This compares with one mouthful of pesticide, which almost inevitably causes death or serious illness. A tip worth passing on, which no doubt most people observe — never ever put poisons in old food containers. That's the quickest ticket to paradise! Recommended for everyone, especially parents.

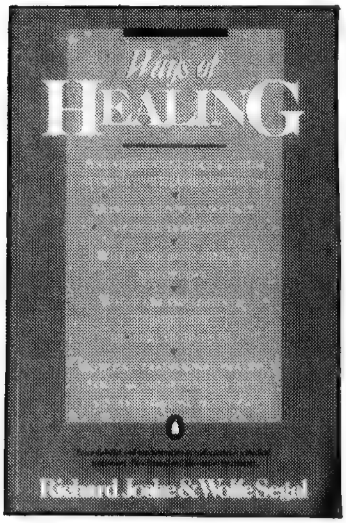
Stretch Sewing Basics by Jill Mitchell 12 Mullarcor St, Ferny Grove, Qld, 4055. $3.40.

FOR people into making your their clothes, here's a handy little book to explain the best way of taking advantage of those convenient but sometimes devilishly difficult stretch fabrics. Jill Mitchell is a dressmaking teacher who has much experience with this sort of fabric and saw the need for such a book. She has published it herself, and it retails for the very reasonable price of $3.40 posted. It is available from her at 12 Mullarcor St, Ferny Grove, Queensland, 4055.

In her booklet she covers many topics, including how to make sense of patterns, how to choose and operate a sewing machine, de-mystifying sewing jargon, and how to take measurements, cut fabric, and a host of other topics which will be of great interest for anyone wishing to use stretch fabrics.

Ways of Healing, by Richard Joske and Wolfe Segal, Penguin, 206 pages, $12.95.

THIS is a very interesting addition to the debate of 'orthodox' versus 'alternative' medicine. It attempts to present a variety of alternatives from a scientific point of view and to evaluate their effectiveness



and their place in a modern health system.

Both editors (this book is a collection of essays from various authors, including the editors) are 'heavies' in the medical world, with impeccable scientific backgrounds.

The more familiar 'alternatives' such as herbalism and homeopathy are included with iridology, meditation, 'alternative' cancer treatments, and Aboriginal medicine.

Although some people may be disappointed by this book, as it offers no wholesale endorsement of alternative medicine, I found it to be thoughtful and thought provoking.

Most of the contributors agree that alternative and traditional medicine have important contributions to make to the current state of medicine, along with modern technological medicine.

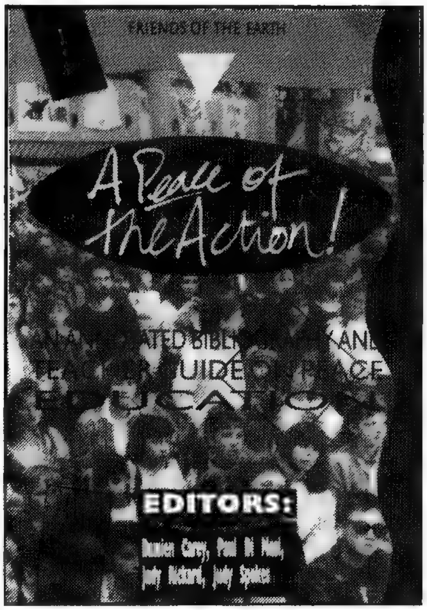
A wholistic health system, with elements taken from all quarters seems to be the aim, using the benefits of clinincal scientific medicine and the more human aspects of alternative medicine.

As Richard Joske points out in his conclusion, "A system must develop which retains the good of the old medicine in a meld with the good of the new medicine . . . this series of essays is one step upon this long road. There is a Chinese proverb which states that a journey of a thousand miles begins with a single step."

A Peace of the Action

Edited by Judy Spokes, Damien Carey, Paul Di Masi, Judy Rickard
Published by Friends Of the Earth,
222 Brunswick St, Brunswick, Victoria, 3056.
172 pages. RRP $5.95.

PEACE education is emerging in schools as a subject many teachers feel is important to present to students. A Martian visitor might wonder why it has taken until the mid-1980s to formalise its teaching in a world of conflict and war, but here is an excellent reference text for any teacher interested in exploring peace issues with their students.


FRIENDS OF THE EARTH
A Peace of the Action!
AN ANNOTATED BIBLIOGRAPHY AND TEACHER GUIDE ON PEACE EDUCATION
EDITORS:
Damien Carey, Paul Di Masi, Judy Rickard, Judy Spokes

'A Peace of the Action' is an authoritative, annotated bibliography and teacher guide on peace education texts.

A group of teachers has worked on over 250 texts, analysing them for classroom use, drawing out important features and classifying them for level of use (for example 'lower and upper primary', 'junior secondary', 'teacher reference' or 'senior secondary').

The editors, all of whom are Melbourne peace activists connected with Friends Of the Earth, have put plenty of midnight oil and sweat into producing this book.

They have performed a great service for peace education, and it is a typical effort of the 'roll up the sleeves and stop talking about it' approach of FOE (a driving force behind the successful blockades of the Roxby Downs uranium mine in the South Australian desert, which all the editors braved).

The range of publications covered in the book is diverse. Under the general heading of peace, the book covers resources on: conflict resolution, non-sexist and multicultural children's books, non-violence, the Pacific area and human rights, which are all integrally linked to a peaceful planet. It also includes the quarterly magazine 'Chain Reaction', FOE's own magazine of news and views on environmental, social and peace related issues.

The book's index lists authors and titles and the FOE Melbourne bookshop (address above) boasts access to the largest range of peace education publications in Australia. Not only should this catalogue become a vital aid in planning peace education courses, buying it helps FOE keep up the good work.

FROM CARTOONS TO CONCERTS

by Camille Thomas

MANY Earth Garden readers have commented this year on our illustrations and line drawings. Because Earth Garden moved south to Victoria we had to find a replacement for Elaine Norling, who worked so well producing EG illustrations for so many years. Bronwyn Halls is Earth Garden's new illustrator and she's been turning her hand to anything from the house sketches in LAND LINES to complex electronic wiring circuits.

Bronwyn is an all-rounder when it comes to illustrating: she makes her living mainly from cartoons in one of Melbourne's leading independent local community newspaper, *The Melbourne Times*, but her background in science and physics means that often she ends up explaining some of the more sophistocated elements of wiring diagrams to Alan and myself. Apart from illustrating and physics Bronwyn is also an accomplished singer and musician — she teaches singing and plays piano as well working as part of a singing group. In fact, Bronwyn's group performed a musical comedy act on Channel Nine's national TV programme, *Hey Hey It's Saturday* last month.

Bronwyn has had plenty of experience as a 'New Settler' living on a bush property near Narooma on the south coast of New South Wales. She's had first hand experience of the topics and illustrations needed for Earth Garden. Although Bronwyn now lives in trendy Carlton she, and her family of cats, retain their interests in alternatives to stressful city lifestyles! (Lately she's been dropping rather unsubtle hints about the new home for our copy of Jackie French's organic gardening book).

Although readers haven't yet been treated to samples of Bronwyn's cartoons, from this March millions of Australians will see Bronwyn's work displayed on envelopes from one end of the country to the other. Bronwyn, along with 24 other leading cartoonists throughout the country, has been commissioned by Australia Post to produce a cartoon stamp for 1988. The other cartoonists include Ron Tandberg, Patrick Cook, Michael and Mary Leunig and Bruce Petty, and the list of well-known names highlights two things. One is that these are the leading cartoonists in Australia and the other is it shows how difficult it can be for a woman to be successful in such a traditionally male-oriented profession. In fact, Bronwyn once remarked that many new customers presume that she will be a man when they call to discuss work (Bronwyn's cartoon signature is simply 'HALLS').

Earlier this year Bronwyn featured in a story in *Women's Day* magazine with a slick photograph and the point that very few women illustrators have so far been able to break into full time work in Australia. Bronwyn does artwork for many groups and publications, and many of them reflect her personal interests: she works for environmental and community groups, including the National Parks Association and Amnesty International publications.

We hope we'll be able to keep Bronwyn as Earth Garden's illustrator for many years to come and we're sure that readers will be pleased to know the face behind the pen.

LAND LINES

LAND LINES are for people buying, selling, seeking or sharing houses and land. It is your responsibility to check all deals. We charge a rate of 24 cents per word (prepaid) for a listing of any desired length, plus $20 extra for a professionally-drawn illustration to go with your ad, taken from any tatty old photo you care to send us. All LAND LINES must include your name and address (phone number is optional). LAND LINES for the February issue should be in (to PO Box 188 Moreland, 3058) by 20 January.

KEMPSEY, 28 acres of secluded hilly bush, 25 km west of Kempsey. Half fenced. Phone and power available. Rain and dam water only. Good house sites. Good positions for dams. Permission to build with no restrictions. 3 km to small town. $20,000 ono. Phone Roger (062) 416767.

WARBURTON VIC, McMahon's Creek, 3/4 acre north facing block, State Forest on two sides. Mountain views, hexagonal split-level concrete slab, plus permit for steel frame mudbrick house. Large garage, small orchard. $26,500. For further details contact: Brian & Dianne Lennon, 17 Lawford St, Box Hill North, Victoria. (03) 898 5129.

WAUCHOPE AREA — preferred but we would consider elsewhere. Wanted for one year lease from February 1988: a house on acreage for a married, self-employed couple (writer/photographer) who also enjoy hobby farming. No children. Willing to caretake. Please contact Pamela and Herman Odijk, Lot 1, Redbank Road, Wauchope, NSW, 2446. Telephone (065) 85 1166.

NSW NEAR TAREE, Doyles River catchment. Two permanent streams with waterfalls. Mountain views, 168 acres. Excellent garden, orchard, house sites. All weather access. 'Non-grazing' neighbours. $25,000 ono. Please phone David (03) 589 4247, or write to 49 Stanley St, Black Rock, 3193.

CLOSE TO SYDNEY. One or two people wanted to help caretake alternative lifestyle property, and help care for elderly lady, close to Sydney. Prefer female keen on garden, crafts, animals. Would suit single mother. Please write to: Caretaker, PO Box 184, Panania, 2213.

TO RENT: Darling Downs, 200 miles west of Brisbane. One bedroom Cinva Ram block house, furnished, on 84 acres of bushland. Half million gallon dam. Solar power and hot water (plus chip heater), wood stove, gas fridge, vegie garden and fruit trees. Chook pen, very tame wildlife (no shooting or cats please). $30 per week, please phone: (074) 653 541, or write: Witches Ridge, c/- The Pines, MS 423, Chinchilla, 4413.

KIN KIN. Shares available in a 150 acre co-op farm. If you'd enjoy a programme of physical work balanced with honest study of the soul's aspirations, controlling the self, and sensing the divine in all forms and circumstances of life, please call. Basic shares $14,000 or $17,000 with unit. Bill, (071) 85 4207.

MURWILLUMBAH AREA, council approved Hamlet Development, approximately 12 acres with each share. Tranquil setting, privacy assured, adjoins State Forest. An abundance of wildlife. All weather access. From $15,500 to $18,500. Write to: Palmview, 30 Arndell St, Macquarie 2614 or ph a/h (062) 51 2247 or a/h (066) 79 3333.

LEGUME, NSW. Girl to share old house with easy going vegetarian family. Free rent and electricity in exchange for help with household duties and some child minding. Own large room, secluded area. Vegie garden etc in early stages. For more details please contact Shelley and Ben Lyne, c/o Legume Post Office, NSW, 2476.

TOMEWIN VIA MURWILLUMBAH. 1/15th share (1.5 ha) council approved multiple occupancy, rainforest, dam, views, 1/2 hour to Gold Coast, 1 1/2 hours to Brisbane $22,000 (066) 84 2176 or Charmaine (066) 72 4524.

MULLUMBIMBY, NORTHERN NSW. 2 acre share plus common land on 104 acres (with 9 other shares). Beautiful panoramic ocean views to Byron Bay and Mount Chincogan. Comfortable timber open plan family home. Cork floors, Nectre fire place. Solar electricity: 24 volts and 240 volts. Two paved verandahs. Solar hot water, telephone, septic, 12,000 gallons concrete rainwater tank. Dam water irrigation, biodynamic bananas, pawpaws. Also studio-garage-workshop, good roads and access. 15 minutes to beach, 8 minutes to Mullumbimby. Schoolbus to primary and high schools. $60,000. Please phone Leena or Roger, (066) 842704.

KURANDA, FAR NORTH QLD — Shares offered in cross-denominational Christian community of at present 7 families, on 87 ha (215 acres) in Kuranda (30 km north of Cairns). Council approved multiple dwellings, orchard established, permanent creek, all services available. Future aims include Christian outreach, providing community help, accommodation etc. Seven Springs Farm, PO Box 110, Kuranda, Queensland 4872, phone (070) 938718.

GYMPIE TO SARINA, wanted coastal land and house. Must have plenty of water and access to creek or river. We are quiet people who enjoy privacy and isolation. Any other quiet, peaceful coastal areas considered. If possible please send photos which we will return to you. Please contact: Deborah Horne, Box 62, Thursday Island, Queensland, 4875.

GOOMBURRA VALLEY, STH EAST QLD. 36 hilly acres mainly cleared, some regrowth, partly fenced, excellent soil, dam, small quarry at front. Sealed road, power and phone available. Underground water in area. 35 minutes from Warwick. 1 hour from Toowoomba. Bus to primary and high schools, $20,000. Phone (07) 2034793 or write to D Spearritt C/-156 Prince Edward Parade, Scarborough, 4020.

NORTH QUEENSLAND land for sale. Twenty-three acres of pioneer country within walking distance of the sea, amongst an established community of alternative lifestyle families. Separate title, good virgin soil, open eucalypt and cool canopy forest, naturally terraced, gently sloping to steep, ideal site for solar energy or wind power.

Reliable year-round rainfall and community gravity-feed water from nearby creek, good swimming holes. All year 4wd access or high clearance 2wd. Run-down timber cabin with large roof, water tanks, wood stove, kero fridge, sink, assorted building materials, 45 minutes drive north to Cooktown. Use of private 4wd access to waterfront. Nearby spectacular waterfalls, rainforest, mangroves and beach.

Although not suitable for large scale grazing or ploughing, property has potential for self-sufficiency in tropical fruit and vegetables, also for cottage craft or as artist's retreat.

Special residential lease expiring 2000 AD, can be converted to freehold, $37,500. Further information phone (070) 98 5440 evenings.

KIN KIN QLD. (30 minutes to Noosa) 27 acres of land suitable for year round growing, frost free slopes with permanent spring and easement to Kin Kin Creek. A grove of 12 fully grown mango trees. 2-3 house sites $50,000 ono. Contact Prabha, PO Box 177, Maleny 4552 or phone (071) 942783.

QUEENSLAND'S DARLING DOWNS. 84 freehold acres of secluded bushland for sale. Cinva Ram constructed house, furnished, with solar power and solar hot water, wood stove, chip heater, telephone. 2&1/2 million litre dam with high-pressure pump to irrigate garden and fruit trees. Semi-tame wildlife. Priced for speedy, no hassles sale: $19,500. For more details, and photo, please write to: Tony Rosoman, PO Box 403, Chinchilla 4413.

MID NORTH COAST OF NSW. For sale: 51 acres, 45 minutes from Port Macquarie, 5 acres cleared, 2 bedroom solar powered house. Income from established nursery, large organic garden, fruit trees, dams, creek, phone, peaceful forest setting, self sufficiency, $79,000 ono, phone (065) 858203.

COMBOYNE, NSW. One fifth share of 640 acres of beautiful secluded valley bordering nature reserve. 3 bedroom house, open fireplace, slow combustion stove, solar electricity, phone, permanent creek, gravity fed irrigation, two dams, over 100 fruit trees, landscape gardens, large shed, 10 minutes to school bus —20 minutes to shops. $42,500. Phone Sharyn (065) 504185.

BATEMAN'S BAY, NSW. 100 acres 20 minutes north of Bateman's Bay. 15 minutes from superb beaches. House, telephone, fenced, orchard, two dams and creek frontage. $160,000. Phone J Smith (044) 781064 a/h RMB Old Highway, East Lynne, NSW, 2536.

ROCK VALLEY, NORTH EAST NSW. Christian multiple occupancy. We have a small cabin and share priced at $15,000 and 6 shares priced at $10,000. Includes use of 4 wheel drive tractor — opportunity for small plantations and cottage industries for committed Christians. Please phone D & D Bacon (066) 293367, Cawongla Rd, Rock Valley, 2480.

BETWEEN NIMBIN AND KYOGLE, Community settlement on beautiful 200 acre property. Affordable to very low income people due to NSW Department of Housing loans available. Advisers, skills course and try out period included. This unique pilot project is now underway (see article this issue). For more information, and to apply, write to Nimbin Neighbourhood Centre, attention D Leggett, Cullin Street, Nimbin, NSW, 2480.

1 HR NORTH OF MELBOURNE Women's spiritual land community. 50 acres of rolling hills, with extensive views 1 hour's drive north of Melbourne, Victoria. Excellent opportunity for women and children or families with little or no capital. Established and rapidly growing wholsale/retail craft business. Mudbrick house. Cottage under construction. Lots of work, gardening, building and craft. Casual people, rent free in return for work. We are vegetarian and into meditation. We are not into fanaticism, drugs, smoking or alcohol. Contact Shanti c/- Strath Creek Post Office 3658, or phone (057) 84 9243.

TWEED VALLEY, NORTH EASTERN NSW. Two five acre properties for sale in Tweed Valley, creek (permanent), road frontage and power. They are adjacent to permaculture farm and close to a large area of National Park. $31,000 each. Please contact Lea Harrison, Stoddarts Road, Tyalgum, 2484 or phone (066) 793242.

NAMBOUR, QUEENSLAND (SUNSHINE COAST) For Sale $61,000. Unique 1/4 acre permaculture property, with beautiful 'Queenslander style' home. Four bedrooms, lounge, TV room, pine kitchen, new bathroom and toilet. Lovely back verandah with great views. Garden fully established with edible landscape in front, back comprising manderin, macademia, mango guava, loquat, bananas and paw paws. Huge vegetable garden with over 50 varieties of herbs. Close to schools, shops. Write to Liz Sinnamon, 22 Fairmeadow Road, Nambour, or phone (071) 415841.

BETWEEN DENILIQUIN AND ECHUCA, mudbrick house set on 3 fenced acres within village co-operative with registered Montessori school, idyllic redgum forest and river property (1000 acres) on Cobb Highway between Deniliquin and Echuca.

Solar powered, wind rotor, generator electricity, phone, rainwater system, dam water, organic garden, shed, poultry pen, dams, wood stove hot water, bathroom, kitchen, large living area, 2 bedroom annexe upstairs. Special offer, German family requires quick sale. $11,000 for house, $4,000 share in company. Phone Rita or Fred Brademann (058) 82 3358 or (064) 54 4167; or write to PO Box 118, Mathoura, NSW, 2710.

CENTRAL TILBA, 10 acres, pretty bush block, dam, tall spotted gums. On the foothills of Mt Dromaderry, close to coast and Narooma $28,000. Phone (02) 949 2830 or write to Jill Collier, 36 Campbell Pde, Manly Vale 2093.

NORTHERN NSW. Enjoy the independence of your own 100 acres plus sharing the benefits of community living, in truly beautiful surroundings. More families, single parents especially welcome as we wish to create an alternative school. Full price $35,000. Please write to Maurice, Two Waters Farm Cooperative, PO Box 63, Tabulam, NSW, 2470.

NSW NORTH COAST. Over two acres with caravan and garden shed on multiple occupancy, soon to be strata title. 30 minutes north west of Lismore on sealed road. Easy access, shop, good soil and home site. $11,500 ONO. Phone (03) 568 6657 or write to Geoff Richards, 3/6 Camira St, Oakleigh, Vic, 3166.

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FRIENDS OF THE EARTH BOOKSHOP. Our bookshop has access to the largest range of anti-nuclear and peace education publications in Australia. See EARTH GARDEN REVIEWS this issue for information about our latest FOE book: 'A Peace of the Action' — perfect for teachers interested in peace education. Friends Of the Earth Melbourne is now at 222 Brunswick Street, Brunswick, 3066.

WILDERNESS SOCIETY FESTIVAL. Why don't you come to Tasmania for a holiday this summer and come to the Wilderness Society's forest festival? This year it's at Jackey's Marsh near Deloraine in northern Tasmania. It's on 6 & 7 February and last year there were a thousand people there. Help protect our National Estate: Jackey's Marsh should not be logged. See page 29 of this issue of EG.

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EG5: The wind — windmills . . . windpumps . . . generators . . . raku pottery . . . Cinva ram . . . poultry . . . Hamburghs . . . moon planting . . . fallout shelter . . . vegan way.

EG6: Solar 1 — sun cults . . . solar cooker . . . sundials . . . Lost World . . . Clifton Pugh . . . concrete house . . . Shalom . . . Cajun cookin' . . . horses . . . spirit of Nimbin.

EG7: Solar 2 — hot water . . . Mudbrick techniques . . . Angora goats . . . make a leather bag and belt . . . mushrooms . . . natural dyes.

EG8: Gas power — methane digester . . . by truck to Tassie . . . cumbungi hats . . . inkle loom . . . candles and tapers . . . country cottages . . . A-frame . . . school gardens . . . sourdough.

EG9: LP gas . . . Mary's place . . . building with stone rubble (slipform) . . . macrobiotics . . . oats . . . ducks . . . rug frame . . . how to kill a pig.

EG10: Granite house . . . geese . . . chip heater . . . bamboo flutes . . . build beehives . . . Jarrah shingles . . . mudbricks . . . Bio-dynamics . . . seaweed . . . tandem . . . Index (EG1-10).

EG11: Water — hydraulic ram . . . waterwheels . . . okra . . . seed primer . . . heavy horses . . . tomatoes . . . soft technology . . . wine . . . hard cheese . . . start with hens.

EG12: Keeping food — drying . . . salting . . . bottling . . . storing . . . tahu . . . tropic delights . . . plant propagation . . . plans for a solar water heater . . . solar stills and cooker . . . Moora Moora.

EG13: OUT OF PRINT.

EG14: Self-sufficiency — gardens for all . . . Botobolar vineyard . . . Terania Creek . . . millet . . . Robinson Crusoe . . . Walden . . . The Nearings . . . stone building.

EG15: A Lytel Herbal — growing and using herbs . . . text and illustrations from the classic 16th C herbals . . . modern commentary . . . Index to EG15.

EG16: A Lytel Herbal (Part 2) — comfrey, lavender, wormwood, yarrow . . . poultry shed . . . peafowl . . . goats . . . basic beekeeping . . . rammed earth building . . . hydraulic ram.

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EG20: Apples . . . pears . . . cordon and espalier . . . build a haybale pig house . . . pollen . . . rose hips . . . mudbrick flats . . . solar homes . . . gourds . . . preserve fence posts.

EG21: Womancraft — all articles by women . . . earthly arts . . . axewomanship . . . glove puppets . . . spinning . . . weaving . . . easy rugs . . . Sumatran house . . . old roses . . . Index (EG10-20).

EG22-23: Australian Access Sourcebook . . . 150 pages . . . Aborigines . . . organic growing . . . permaculture . . . earth building . . . wind . . . solar . . . water power . . . technology . . . water supply . . . access to groups, plans, books, tools.

EG24: Place — 24 new settlers write . . . Mare Carter . . . Ron Edwards . . . Neil Douglas . . . Gundaroo Store . . . Rainbow Region . . . Mt Oak . . . Moora Moora . . . Universal Brotherhood . . . bush ashram.

EG25: Australian Access Sourcebook (Part 2) — 130 pages . . . livestock . . . aquaculture . . . fencing . . . killing . . . tanning . . . food and nutrition . . . grain grinders . . . solar homes . . . methane . . . greenhouse . . . Dorothy Hall.

EG26: The earth-built kasbahs . . . owner built homes in stone . . . timber . . . mudbricks . . . a slab cottage . . . tree felling . . . solar electrics . . . acorns . . . compost dunny . . . quandong . . . pumpkin recipes.

EG27: 100 tropical food plants for Australia (part 1) . . . 16 legumes . . . winged bean . . . pigeon pea . . . lablab . . . cowpea . . . adzuki bean . . . blacksmithing . . . bluestone building . . . wok cooking.

EG28: Tropical food plants (part 2) . . . horse and buggy . . . packhorsing the Alps . . . black sheep . . . Merinos . . . bullocks . . . tamarillo . . . stringybark baskets . . . solar trike . . . persimmons.

EG29: Mudbricks — the monastery at Stroud . . . Bob's bonza brickmaker . . . earth floors . . . curved walls . . . herb roof . . . cutting axe . . . low energy design . . . coconut mats . . . mangoes . . . tropical food plants (part 3).

EG43: Earth domes and vaults . . . rendering earth walls . . . quarry bush stone . . . bush shower . . . Peter Pedals' incinerator hot water and Pelton wheel . . . low voltage wiring . . . sheep . . . donkeys . . . horses.

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EG46: Windworks — wind generators . . . solar trackers . . . water turbines . . . 12 V bilge pump . . . herbal shampoo . . . compost loos . . . Tanzania . . . the algae pond . . . 12 V lights . . . Krypton lamps.

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EG34: China — communes . . . trees . . . fish farming . . . recycling human wastes . . . biogas . . . transport . . . travel notes . . . Chinese earth building (Ron Edwards) . . . rainforest . . . bread and jam.

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EG42: Earth covered homes . . . Burra dugouts . . . slipform stone . . . the flood-defensive house . . . tomato tips . . . deep ecology . . . build a pigsty . . . EG reader survey . . . the Tuareg . . . Jean Pain's methods.

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In our last issue

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